15c

The OIL WEEKLY

OIL and GAS ENGINEERING

FOR OIL AND GAS PRODUCERS AND PIPE LINE MEN

THE WEEK'S NEWS INTERPRETED

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FEB 5 1937
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ROLLER BIT

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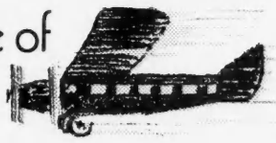
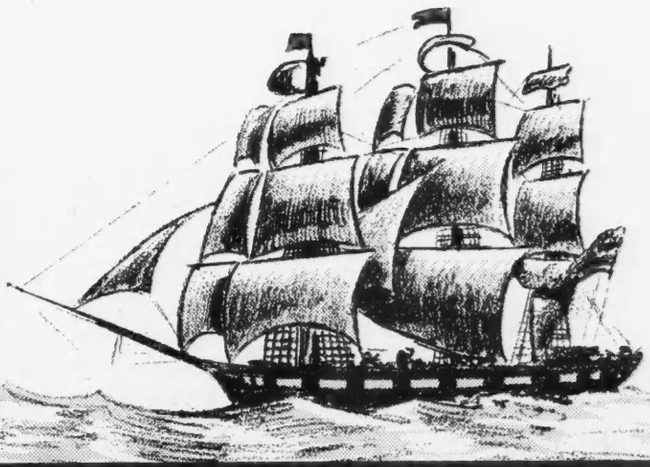
- FASTER HOLE WITH LESS WEIGHT
- MORE HOLE PER BIT
- GREATER PROTECTION TO YOUR DRILL STEM



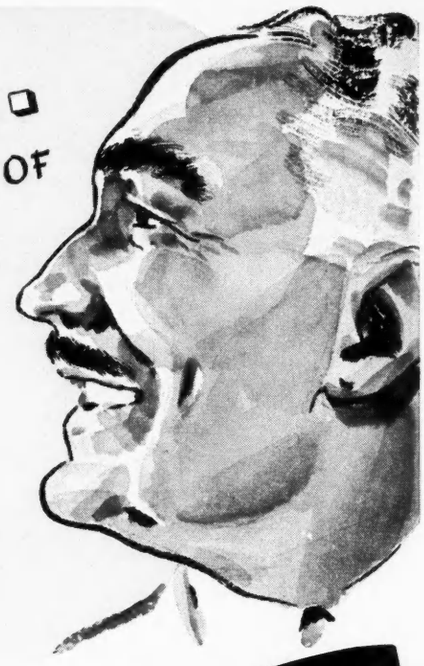
Value of Time . . .

The constant call for SPEED and TIME REDUCTION has led to vast improvements in every phase of modern life . . . In this, REED has kept pace . . . The NEW REED DK ROCK BIT being especially designed for still FASTER HOLE WITH GREATER SAFETY.



Pages 1443-1494 of the 1937 Composite Catalog contain the COMPLETE REED 1937 CATALOG.

"SAY!... FROM THE STANDPOINT OF COMPARATIVE SERVICE TRU·LAY PREFORMED IS GROSSLY UNDER-PRICED"



"I'll trade Two-Bits for a Dollar.. ANY DAY!"

GREEN SIGNIFIES SAFETY

"Of course, TRU-LAY Preformed costs a little more. But it is worth far more than the slight differential in price. . . . Because it not only lasts longer but keeps your drilling rig operating with fewer interruptions—is safer for the men to handle—is faster and better all around.

"Initial cost should never be the determining factor in the purchase of anything. Preforming has made as much difference in wire lines as there always has been in shoes. A little more expensive shoe will invariably fit your feet better and wear longer. So it is with a rotary line. TRU-LAY costs a little more because it has been preformed. But it fits into your job better—and lasts *much* longer. When I pay two-bits more for TRU-LAY Preformed, I know I am going to get an extra dollar's worth of service. That's why I stick to TRU-LAY—and *have,* ever since it was introduced back in 1924. American Cable is the pioneer in the development and perfection of preformed wire lines."

AMERICAN CABLE DIVISION
WILKES-BARRE, PENNSYLVANIA
AMERICAN CHAIN & CABLE COMPANY, Inc.
Branches or Distributors in All Oil Field Centers

In Business for Your Safety

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TRU·LAY *Preformed* ROTARY LINES

ALL AMERICAN CABLE DIVISION ROPES MADE OF IMPROVED PLOW STEEL ARE IDENTIFIED BY THE EMERALD STRAND

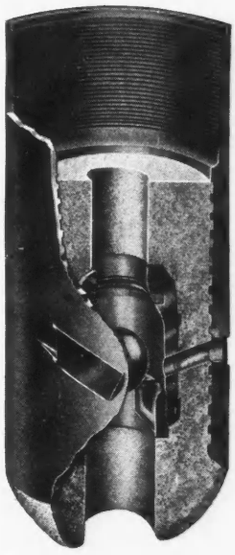
WHAT CAUSES *Cementing Failures?*

. . . AND CAN THEY BE AVOIDED?

Every **OIL MAN might well give careful consideration to these two important questions. Failure of the original cement job to effect a water shut-off is admittedly, in some instances, due to subsurface conditions which cannot be controlled. In the majority of cases, however, results *can be definitely controlled*, and one important step in that direction is to insure *proper distribution of cement up and around the shoe and casing.***

HOW THE BAKER CEMENT WHIRLER FLOAT SHOE PROVIDES PROPER CEMENT DISTRIBUTION

The Baker Cement Whirler Float Shoe differs from ordinary types of cement shoes in that it is designed with a number of baffled side ports (see illustration), which direct the cement slurry upward with a rapid whirling motion. This spiral movement provides the best possible chance for the complete distribution of the cement for a greater distance up and around the casing, resulting in a better cementing job, and practically eliminating any tendency toward channeling.



Also AN EFFICIENT FLOAT SHOE

While the Baker Cement Whirler Float Shoe is primarily a cementing shoe, it is also a strong, safe, guiding and floating shoe. It possesses the 3 Baker Features, in a perfectly balanced combination . . .

1. STRENGTH

It is stronger than the collapsing strength of your casing — safe for strings of *any* length.

2. VALVE EFFICIENCY

A Bakelite valve chamber is provided, having ample circulation areas, with a buoyant Bakelite ball which floats in rotary mud or cement slurry, double-sealing against a rubber ring (backed by Bakelite and concrete) with the *slightest reversal of pressure.*

3. DRILLABILITY

Baker Cement Equipment affords complete drillability as *No Metal* ever is used for the internal construction of plug or valve. The entire assembly is constructed of special Baker-Formula Concrete and Bakelite and is easily drilled *OUT* and drilled *UP* into small harmless fragments and *circulated out of the hole.* There is *no metal* left in the hole to prevent coring directly below the shoe, or to deflect the bit and start a crooked hole.

Write for the large Baker Catalog or refer to the Baker Section in your 1937 Composite Catalog.

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BAKER CEMENT WHIRLER FLOAT SHOE

THEY USED TO CHEW OFF THEIR LEGS

FIFTEEN out of every 100 animals caught in traps used to escape by twisting or chewing off their injured legs. Fur of most of the remaining 85 was mutilated by the sharp trap jaws, and so made less valuable. Mothers with litters were injured, and even if released often died, leaving their cubs to starve.

A trapper had an idea for rubber-covered trap jaws which would grip yet not crush. But the rubber would have to stand long exposure to sunlight, extremes of temperature, rough handling, trap oil—every one a well-known enemy of rubber as usually made.

The trapper came to Goodrich, and Goodrich had exactly the rubber needed. Thousands of the new traps are now in use, and because they do not crush the animals' legs, fur is worth more, mothers can be released unhurt to their litters, and only 2 instead of 15 animals in 100 escape by chewing off their trapped legs.

Goodrich engineers are constantly developing new rubber compounds, in their search for new properties—to improve the life and value of special rubber products, as well as the more familiar items such as belting and hose. Goodrich development has resulted in one new rubber of vastly greater flexibility—and users of belting benefit... another rubber that can actually outlast steel 10 to 1 in abrasive wear—and mines and rock products plants save money on chutes . . . another rubber with improved resistance to chemicals and heat—and steel mills speed up pickling operations, reduce expense.

Rubber, as Goodrich can make it, is improving operations and cutting costs in thousands of plants. To find out what it could save you, write The B. F. Goodrich Company, Mechanical Rubber Goods Division, Akron, Ohio.

Goodrich

ALL *products problems* IN RUBBER

THE OIL WEEKLY

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The Oil Man's Calendar

FEB.	
15–19	**American Institute of Mining and Metalurgical Engineers, New York.**
25–26	**American Petroleum Institute, Mid-Continent District Division of Production, Tulsa.**
MAR.	
12	**Interstate Oil Compact Commission, Oklahoma City, Oklahoma.**
17–19	**American Association of Petroleum Geologists, Los Angeles.**
APR.	
8–10	**Petroleum Industry Electrical Association, Shreveport, Louisiana.**
13	**American Petroleum Institute, Division of Production, Pacific Coast District, Los Angeles.**
15–16	**National Petroleum Association, Cleveland, Ohio.**
26–28	**Western Petroleum Refiners Association, Hot Springs, Arkansas.**
MAY	
6–7	**American Petroleum Institute, Division of Production, Eastern District, Columbus, Ohio.**
10–16	**American Gas Association, Natural Gas Department, Kansas City, Missouri.**
19–21	**Natural Gasoline Association of America, Tulsa.**
23–27	**National Association of Purchasing Agents, (Oil Company Buyers' Group), Pittsburgh, Pa.**
JUNE	
1–3	**American Petroleum Institute, Mid-Year Meeting, Colorado Springs, Colorado.**
11	**Interstate Oil Compact Commission, Santa Fe, New Mexico.**
17–19	**Pennsylvania Grade Crude Oil Association, Sailing from Buffalo, New York.**

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IN DOLLARS AND CENTS....

. . . it might cost you less to live on dried beans, oleomargarin and corn bread than on a balanced diet . . .

. . . it might cost you less to ride trolleys, trains and taxis than to own and operate an automobile . . .

. . . it might cost you less to light your home with candles or kerosene than with incandescent lamps . . .

. . . it might cost you less to dress your family in cotton than in silk and wool . . .

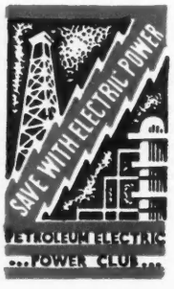
. . . it might cost you less to live in an ancient house in a run-down neighborhood than in a modern home on a good street . . .

. . . and, in some cases, it might seem to cost you less to do without Purchased Electric Power . . .
But who wants to do any of these things?

REAL ECONOMY is seldom solely a matter of dollars and cents.

When prime movers are up for consideration, check all angles with engineers from your Power Company.

PURCHASED ELECTRIC POWER



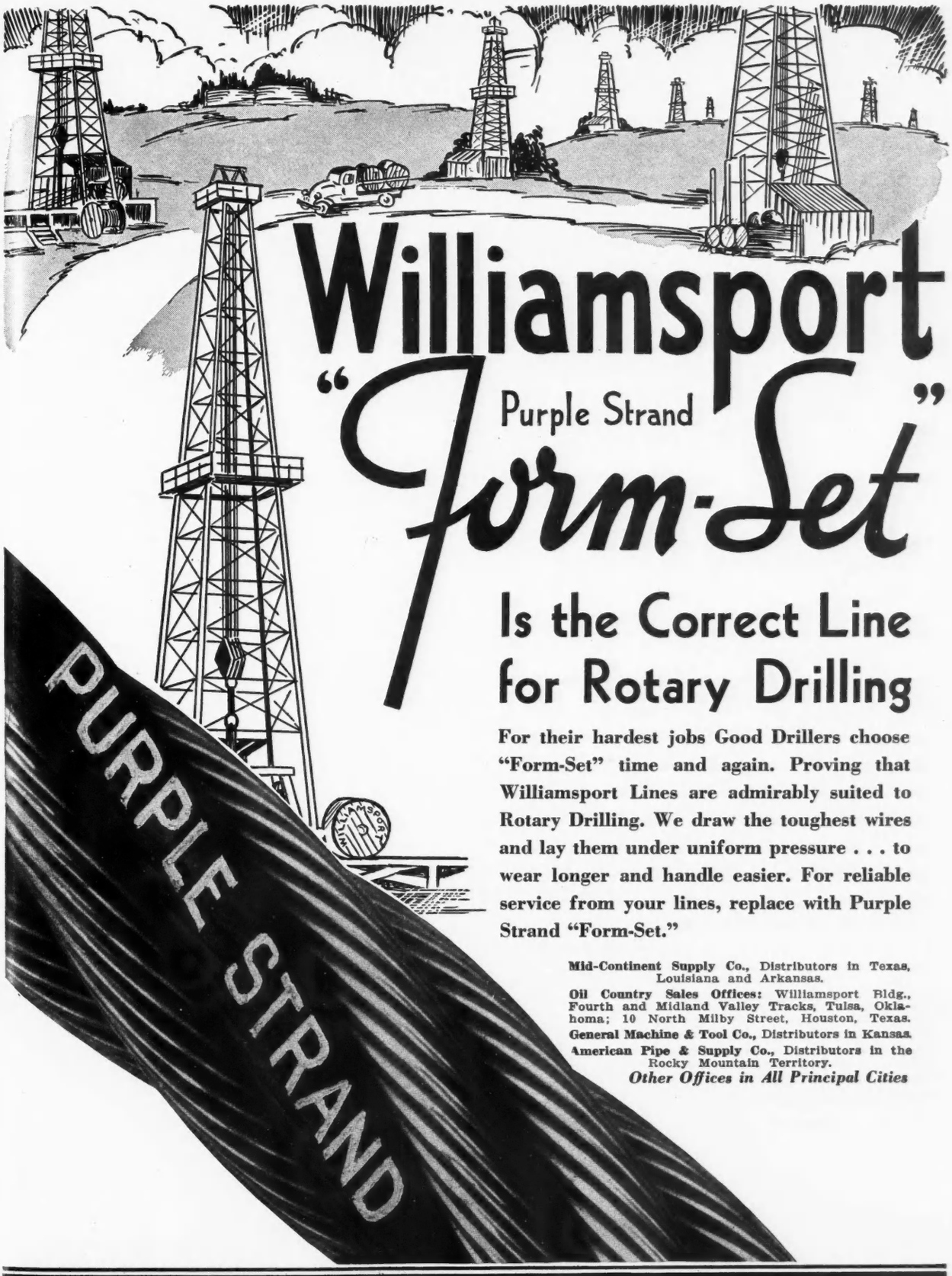
PETROLEUM ELECTRIC POWER CLUB

LOOKING AHEAD

WITH THE EDITOR

THERE has been considerable worry in California over the rapid decline in unproduced reserves during the past seven years, but the past six months has changed the petroleum picture of the state sharply. A new slant on future reserves has been procured, and has placed the West Coast in a much more favorable light. The sudden change has been due to successful geophysical work, which apparently opens for immediate exploration the flat section of San Joaquin Valley. Just when companies were about to give up geophysical inspection, two fields, rated as the most important discoveries since 1929, were discovered. Brad Mills, who at present is making a survey of the state's situation, writes interestingly on this situation in next week's issue.

A GREAT deal of thought is being given to the methods of taking potentials of wells, which has been practically necessary under proration. Many engineers would like to do away with the open-flow potential, on the other hand a goodly number of engineers are adverse to the use of other methods. Apparently most engineers who favor the open-flow potential have been reluctant to prepare data on the advantages of method, perhaps for fear of attack, writes S. F. Shaw, consulting engineer. In any event, discussion of the subject from all angles should bring out many a valuable fact—so next week the data assembled by Mr. Shaw and his correlations will be presented.



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Purple Strand

Is the Correct Line for Rotary Drilling

For their hardest jobs Good Drillers choose "Form-Set" time and again. Proving that Williamsport Lines are admirably suited to Rotary Drilling. We draw the toughest wires and lay them under uniform pressure . . . to wear longer and handle easier. For reliable service from your lines, replace with Purple Strand "Form-Set."

Mid-Continent Supply Co., Distributors in Texas, Louisiana and Arkansas.

Oil Country Sales Offices: Williamsport Bldg., Fourth and Midland Valley Tracks, Tulsa, Oklahoma; 10 North Milby Street, Houston, Texas.

General Machine & Tool Co., Distributors in Kansas.

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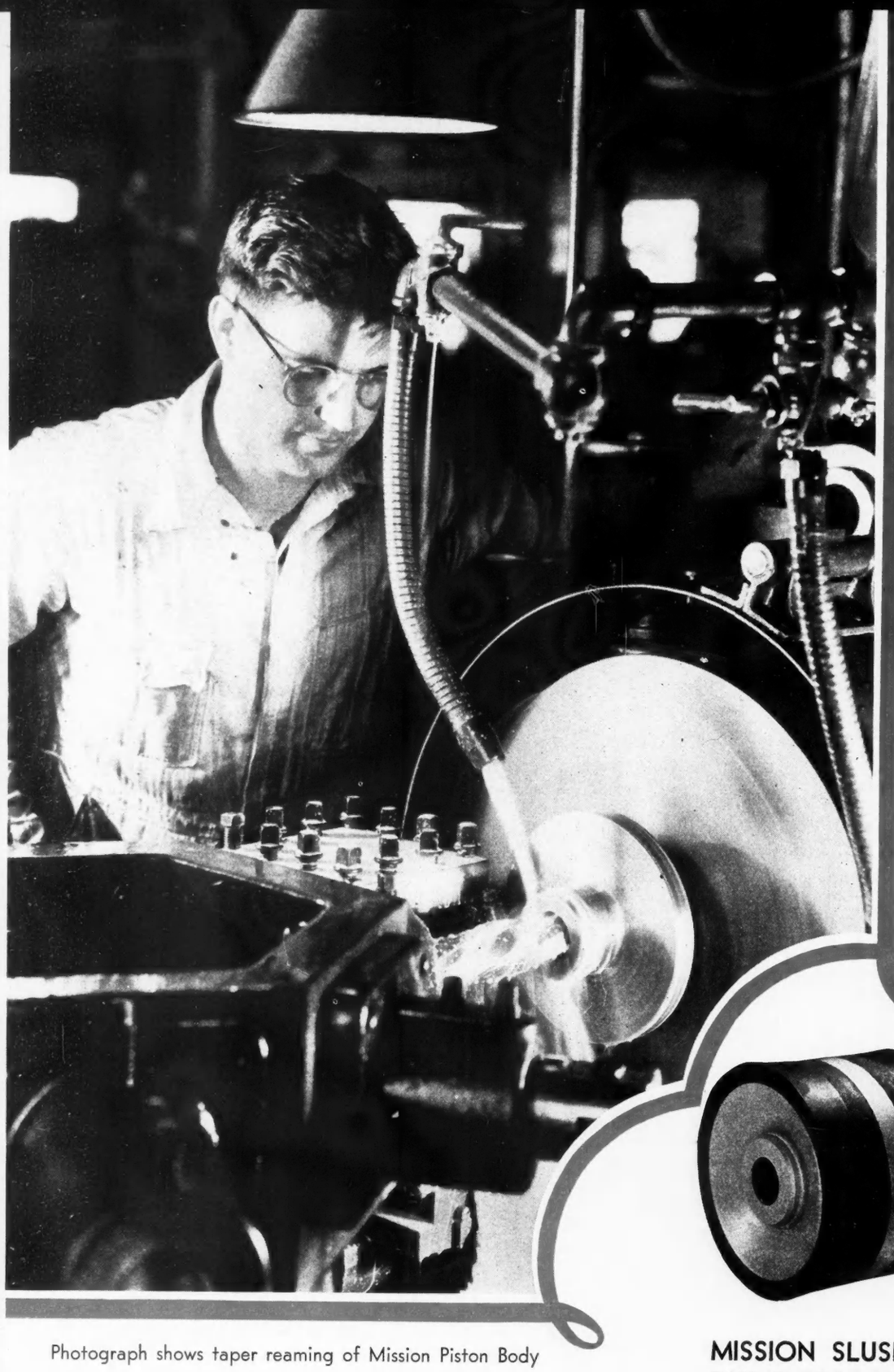
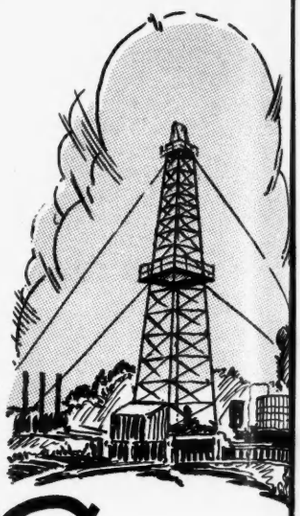


Photograph shows taper reaming of Mission Piston Body

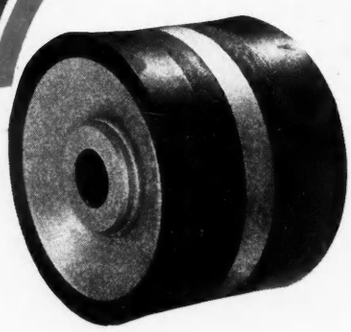


Extrem ACCURAC

in machining of Missio chrome nickel, drop forge steel, one-piece construc tion piston bodies

. . . INSURES . .

pistons that can be use with **absolute safety o tapered rods, the on method of attaching tha prevents cut-outs . . . pi tons that resist any pre sure, eliminating dange of wrecking pumps.**



MISSION SLUSH PUMP PISTON

MISSION MANUFACTURING CO.

No. 4 of a series on Mission Shop Practices

HUMBLE ROAD - - - - - - - - - - - - - HOUSTON, TEXAS

Mission Slips . . . Mission Valves . . . Mission Pistons . . . Mission Swabs

SOLD THROUGH SUPPLY STORES EVERYWHERE

THE OIL WEEKLY

FOR OIL AND GAS PRODUCERS
AND PIPE LINE MEN

ENGINEERING NEWS STATISTICS

WARREN L. BAKER, Editor

This Week:

AT last the general crude price advance long predicted and anticipated since January 4 occurred. Humble Oil & Refining Company and Carter Oil Company, subsidiaries of Standard Oil Company of New Jersey, initiated the move in Texas and Oklahoma-Kansas respectively. Other major purchasers immediately followed suit. The increase ranged from 10 to 15 cents per barrel, varying in different fields and districts. **Page 10.**

THE United States Government is taking steps that propose to conserve to the greatest extent possible oil and other fuel reserves under federal lands. Moves are being made on two fronts. The Department of Justice is investigating titles held by private owners, and measures are being introduced into Congress for the protection, consolidation and conservation of all underground crude under naval tracts. **Page 11.**

A PATENT infringement suit involving the seismographic method of locating oil structures was settled out of court in Houston last week. By terms of the agreement, all oil companies and contracting geophysical companies using the seismograph are to pay The Texas Company $10,000 per crew for a license and release. However, an unlicensed contractor may do work for a licensed company without penalty, and vice versa. Because of the widespread use of the method the suit was of great interest to the oil industry at large. **Page 11.**

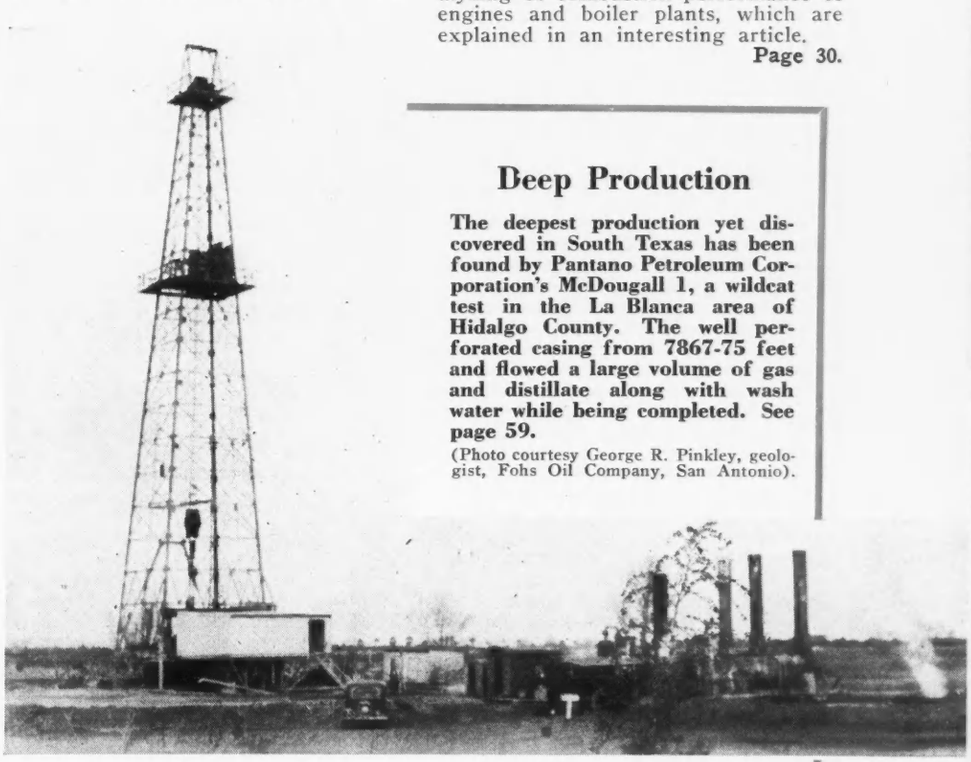
OF much interest last week was the discovery of a new oil field in Illinois, the first important find in several years. The well is good for 600 to 700 barrels at 1418 feet, and is expected to give impetus to the large leasing campaign that has been carried on for the past year in the south central part of the state. The strike is the first test drilled on a geophysical prospect in the state, and is the first rotary drilled test in the area. **Page 70.**

THE Texas Senate Investigating Committee has filed its report and made recommendations. General opinion was that the report disclosed little data not familiar to oil men, but several points were of interest, particularly the part regarding the affairs of E. N. Stanley, chief conservation officer for the Railroad Commission. **Page 12.**

WITH the worst flood in history of the United States sweeping down the Ohio and Mississippi rivers, oil companies operating in the Atchafalaya basin of southern Louisiana are taking precautions to prepare their properties against damage. Approximately 18 oil fields may feel the swirl of flood waters, and much equipment may be lost unless all possible care is taken. **Page 14.**

THE development of oil fields in the swampy marsh area of the Louisiana Gulf Coast has been facilitated to a large degree by vast equipment improvement. Drilling, producing, storage and transportation operations in the region are all conducted with barges, but today these novel procedures have assumed normal field work aspect because of the improved technique and machinery. **Page 21.**

IT is generally recognized that engineers are in need of simple, direct and short means of calculating. Among the methods applicable to the petroleum industry is the molal computation, which is particularly useful in making combustion calculations, in that it lends itself readily to the analyzing of combustion performance of engines and boiler plants, which are explained in an interesting article. **Page 30.**



Deep Production

The deepest production yet discovered in South Texas has been found by Pantano Petroleum Corporation's McDougall 1, a wildcat test in the La Blanca area of Hidalgo County. The well perforated casing from 7867-75 feet and flowed a large volume of gas and distillate along with wash water while being completed. **See page 59.**

(Photo courtesy George R. Pinkley, geologist, Fohs Oil Company, San Antonio).

Crude Price Raise

POSTINGS IN MID-CONTINENT ADVANCED 10 TO 15 CENTS

HOUSTON.

A GENERAL crude price advance of 10 to 15 cents a barrel became assured in the Mid-Continent and in the Middle West late January 28, after numerous major and smaller companies promptly met higher prices posted by Humble Oil & Refining Company in Texas and New Mexico, and by The Carter Oil Company in Oklahoma and Kansas.

The advance was extended into Louisiana and Arkansas by a new schedule of Standard Oil Company of Louisiana, and into the Middle Western States by increases of The Ohio Oil Company.

The Rocky Mountain States participated in the increases, when various purchasers put into effect new schedules for fields of that district.

These increases of 10 to 15 cents were accepted also by several companies that had sought early in January to inaugurate a 17-cent increase, as those concerns lowered postings back to the new general levels.

Humble Starts Advance

The general move toward the higher price levels was precipitated Wednesday night, January 27, when Humble Oil & Refining Company, largest buyer in Texas, announced that on the following day it would begin paying higher prices throughout Texas and in New Mexico.

The advance spread to Oklahoma and Kansas early the next day, January 28, when The Carter Oil Company raised its postings 12 cents. Skelly Oil Company was among the first to follow Carter, meeting the increases for Kansas.

East Texas Up 12 Cents

Humble Oil & Refining Company's new schedule provided for a 12 cent increase in the East Texas field, or from $1.15 to $1.27 a barrel. Other fields of eastern Texas also were raised 12 cents. But for West Central Texas and the Texas Panhandle only a 10 cent increase was scheduled by the Humble company. West Texas and New Mexico crudes were raised 10 cents, too, but the gravity schedule was extended to embody further grading of both the higher and lower gravity oils.

For the regular Texas Gulf Coast fields, including Goose Creek, Hull, Barbers Hill, and others, Humble adopted an entirely new gravity schedule, substituting a combination 3-cent and 2-cent differential basis for the previous regular 2-cent differential, and extending the gravity scale upward from a top classification of 34 gravity and above to one of 40 and above. On the grades from 20 to 34 gravity, the increases ranged from 1 to 7 cents, but for the lighter oils above 34 gravity, previously all priced at $1.22, the new prices ranged upward to $1.41, an increase of 19 cents on the crude of 40 gravity and above.

Anahuac, Dickinson, Flour Bluff, and Turtle Bay, high gravity oil fields of the Texas Gulf Coast, were given a uniform 12 cent increase for all grades.

For Conroe, Tomball, Raccoon Bend (Deep Sand) and Satsuma crudes, Humble's new schedule provided increases of 10 cents, but the schedule was extended several degrees to further grade the heavier oils.

Refugio District Changes

Whereas the Humble company previously had been paying a flat price of 95 cents a barrel for the Refugio type heavy crudes and the regular Texas Gulf Coast gravity schedule for the lighter oils of the Refugio district, the new schedule grouped the heavy and light oils of the Refugio area into one gravity scale schedule that was the same as for the regular Texas Gulf Coast fields, such as Goose Creek. Thus the new Refugio district postings ranged from 95 cents to $1.41.

The new Humble schedule similarly put all the Mirando type oils, heavy and light, into a common gravity basis schedule, 5 cents lower than the regular Gulf Coast prices for each gravity listing. Previously, all Mirando district heavy oil had a flat price of 90 cents a barrel.

Prices in the Salt Flat, Darst Creek, Hilbig, Carrol, Clark and Zoboroski fields, of the Balcones fault zone, south central Texas, were raised 12 cents, or from 97 cents to $1.09.

Pettus crude was raised 12 cents, also, or from $1.25 to $1.37 a barrel.

Talco oil, formerly 65 cents, was raised 8 cents, or to 73 cents.

Oklahoma-Kansas Increased

The new schedule initiated by The Carter Oil Company for Oklahoma and Kansas embodied an increase of 12 cents for each grade of crude. The new postings ranged from 98 cents for below 25 gravity and $1 for 25-25.9 gravity, upward by two cent differential to a top price of $1.30 for 40 gravity and above.

Arkansas-Louisiana Prices

The increases put into effect January 28 by Standard Oil Company of Louisiana ranged from 12 to 15 cents for the Ar-

[*Continued on page 41*]

Thompson Gratified

CRUDE PRICE HIKE JUSTIFIES TEXAS OIL PRODUCTION RATE

AUSTIN.

WHEN asked to comment on the general price increase of crude oil, Ernest O. Thompson, member of the Railroad Commission of Texas, said:

"Naturally we are gratified to see the general price increase of 10½ cents a barrel on Texas crude oil.

"This means an increase of more than $125,000 per day to Texas.

Means $45,000,000 Annually

"It means that oil will bring to Texas at least $45,000,000 more in 1937 than it did in 1936."

Thompson further stated that:

"We are particularly gratified over the fact that our estimates and studies on market demand have been gloriously justified.

"Some people thought we were permitting too much crude to be produced in Texas. Evidently we were not producing too much oil in Texas. The price of oil does not increase when too much oil is being produced.

"If too much oil is produced the price of oil drops.

"It has been the policy of the Texas Railroad Commission to allow all the oil to be produced which can be produced without causing physical waste in the field or particular well provided that in all events the total oil produced does not exceed the market demand.

"Every oil well in Texas is producing and selling its fair share of the market each day. There are no unconnected oil wells in Texas. Proration is really working and is spreading the market effectively among all producers alike, big and little, in Texas today."

Thompson called particular attention to the fact that:

"During the past five years the market for Texas oil has been built up from 759,000 barrels per day to the present production of 1,290,000 barrels. We have increased Texas oil output more than 500,000 barrels of oil per day and have not flooded the market.

Gasoline Still Cheap

"During this period oil has gone from 10 cents a barrel to a dollar and a quarter. At the present rate of production this means an increase of more than 500 millions of dollars per year to Texas.

"But the other pertinent fact must not be overlooked. The gasoline consumer has been fully protected.

"Gasoline in Texas is the cheapest product on the market. It is the biggest bargain today.

"When you take off the 5 cent tax you will see that gasoline is really most reasonably priced in Texas. We are charged by law to see to it that the consumers of gasoline are protected from high prices. We have done it."

Tighter Policy

GOVERNMENT WANTS FEDERAL OIL RESERVES CONSERVED

WASHINGTON.

FALLING in line behind the other major powers in preparing for possible new wars, the Roosevelt administration this week took steps contemplated to conserve to the greatest possible extent all oil and other fuel reserves under federal lands.

A sharp tightening up of the government's policy with respect to the oil reserves was indicated by moves made on two fronts.

At the Department of Justice, disclosure by Attorney General Cummings that the Public Lands division was completing a study of "legal questions" surrounding the title of Tide Water Oil Company to petroleum lying under Pacific waters off the coast of California, where a number of wells have been drilled, was seen as offering the possibilities of a move on the part of the federal government to set up a claim to such oil.

At the capitol, at the request of the Navy Department, Representative Vinson of Georgia and Senator Walsh of Massachusetts, chairman, respectively, of the House and Senate Committees on Naval Affairs, introduced measures providing for the consolidation and protection of oil lands owned by the government, particularly Naval Petroleum Reserve No. 1, and the conservation in the ground of oil and gas; extending the law to the oil shale and other fuel reserves; eliminating ownership in leases on the reserves by foreigners whose governments do not grant reciprocal privileges to our citizens, and laying a basis for the acquisition of private holdings in the reserves.

Postpone Vinson Bill Hearing

Hearings on the Vinson bill before the House Naval Affairs Committee, with representatives of the Navy Department as witnesses, were postponed January 29.

Announcing only that Assistant Attorney General Harry W. Blair would shortly submit a voluminous report on Tide Water Oil Company's title to oil lying off the Pacific Coast, the Attorney General refused to discuss the matter other than to say that the Public Lands Division of the department has been engaged for some time in an intensive investigation of an "unusual situation" involving "many interesting and novel" phases.

The inquiry, it was indicated, dealt with the general status of lands under water within the "three-mile limit" of federal jurisdiction off the coasts of the United States.

Under the bill, the secretary is directed to take possession of all properties within the reserves which are or may become subject to the control and use of the government for naval purposes, and to "conserve, develop, use and operate the same, in his discretion, directly or by contract, lease or otherwise," but is given exclusive jurisdiction and control over all lands in Petroleum Reserves Nos. 1 and 2 which are now under lease.

It is further provided that, in order to consolidate and protect the oil lands owned by the government, the secretary may contract with owners or lessees of land within or adjoining such reserves for conservation in the ground of oil and gas and for compensation for estimated drainage in lieu of drilling or operating offset wells, and may exchange government land in Reserve No. 1, rights to royalty production from any of the petroleum reserves and the right to any moneys due the government as a result of the illegal extraction of oil products from lands within Reserve No. 1 for privately-owned land or leases within Reserve No. 1.

"In the event of the inability of the Secretary of the Navy to make satisfactory exchanges of lands or agreements for the conservation of naval petroleum with the private owners of lands or leases within or adjoining naval Petroleum Reserve No. 1, as provided for in this act," it is stipulated, "he is hereby authorized, with the approval of the President, to acquire such privately-owned lands or leases in naval Petroleum Reserve No. 1 by purchase or condemnation."

Present leases on reserve lands, except those which have become a part of an approved unit or cooperative plan and agreement, are to terminate at the expiration of their initial 20-year periods, but the lands covered by such leases may be re-leased, with preferential rights to former lessees.

Senator Walsh also introduced a bill authorizing the Secretary of the Interior to accept title from the Utah authorities to a certain state-owned section of land and, in return, to patent to

Settle Out of Court

SEISMOGRAPH INFRINGEMENT PATENT SUIT TERMINATED

HOUSTON.

A DEVELOPMENT of great interest to the oil industry last week was the settlement out of court of the seismograph patent infringement suit at what is considered a reasonable figure. In view of the satisfactory terms of the settlement, which is not yet completely final, it was the general consensus of opinion in the Gulf Coast, where the method is used on a larger scale than elsewhere for finding oil structures, that it would prove to be only a small handicap. It was believed that seismograph contractors would not find it necessary to advance their fees, except to those companies that fail to procure licenses, and that any increase in price for their work would not be large.

Many Concerns Involved

At the time of the announcement that progress was being made in settling the suit out of court, the case was pending in federal court in Houston, but the case is to be postponed. The suit was brought by The Texas Company against Sun Oil Company, but the outcome was of vital importance to all concerns and many of the larger firms and contracting companies joined in the defense.

The case involved the Mintrop and McCollum patents pertaining to seismographic methods of locating subterranean oil structures, which has been used widely in the Gulf Coast and many other sections of the United States and also in foreign countries. The Texas Company acquired these patents several years ago and filed suit approximately two years ago.

While the final agreements have not been concluded, contracts for buying of licenses are in the hands of both oil companies and contracting firms. It is understood that members of a so-called "primary group," composed of major oil firms that have borne the burden of the defense, are each acquiring a release and license from The Texas Company. A similar release and license under the same terms has been offered to the numerous members of the "secondary group."

$10,000 Per Crew

Each member of the group involved in the settlement, both primary and secondary, account for their releases and licenses on the basis of $10,000 per seismographic party, with the understanding that a completely paid up license for an unlimited number of crews may be acquired for a total payment of $125,000. Moreover, terms have been worked out for paying the release and license fee over a period of years, it being understood that contractors would be given five years to make their payments of $10,000 per crew.

It is not anticipated that all the firms who do seismographic work by contracts will take out licenses for all their crews, as the terms of the agreement require only that either the contracting company or the oil producing concern have a license. In other words, a licensed oil company can do business with an unlicensed contractor without penalty, and vice versa. One contractor was of the opinion it would be necessary for companies engaged in this type of work to take out but one or two licenses, while another believed that it would result in contracting firms taking out licenses for about half of their present number of crews, with the other half to be employed in doing work for licensed companies. This condition, coupled with the arrangements for payments, materially lightened the burden on contractors, who otherwise would have been hard hit.

the state other land in Utah as one step toward consolidating the oil reserves.

"The conservation of these reserves is one of our most important national defense problems," Senator Walsh declared, in discussing the bills. "The depletion of these reserves will menace our national security in the future. At the present time practically all of the vessels of the American navy burn oil, and no coal-burning vessels can compete with them in maneuverability. If adequate provision is not made for a reserve supply of oil we may face the possibility of having a large fleet of exclusively oil-burning ships with no oil available. Unless these oil reserves are maintained, it is possible that the price of oil in the future will be greatly advanced, which will result in an enormous increase in cost in operating the fleet, or reduced activity of the fleet in time of a national emergency.

Oil of Great Importance

"The importance of oil," the Senator pointed out, "was well illustrated in Italy's recent conquest of Ethiopia. When oil sanctions were proposed, Mussolini let it be known that such sanctions would be considered as hostile acts. It is more important at the present time to conserve these resources than it was when they were first established, as there has been an increased demand for oil. These reserves are therefore of increased value and importance.

"If the United States adopts a 'cash and carry' neutrality policy, the value of these oil reserves will be still further enhanced as other nations may establish a 'cash and carry' neutrality policy against us in time of war.

"These bills do not appropriate any money but are an authorization for appropriations should they become necessary."

Declaring that the Vinson-Walsh

[*Continued on page 45*]

RODESSA CUT

Louisiana order allows field 50,000 barrels

SHREVEPORT.

THE daily allowable of the Rodessa field, Louisiana side, was cut 12,500 barrels to 50,000 barrels for February, in an order issued last week by the Department of Conservation. Other North Louisiana fields will be allowed to produce 22,000 barrels daily. Allowable for the entire state was set at 235,700 barrels as compared with 240,650 barrels in January.

Immediately, a new order was issued fixing the daily allowables for wells on the Louisiana side of the Rodessa field to comply with the 50,000-barrel total. As of January 24 when the new Rodessa order was issued, there were 364 wells in the field, of which 277 were classed as oil wells and 79 gas wells. There were 8 shut in.

Production of the 2777 oil wells was set at 47,007 barrels, with 3000 barrels left to take care of completions during the month. The area allotted to oil wells was 5781.1 acres, with acreage factor of 1 acre equals 5.7083 barrels. The bottom-hole pressure factor is 1 pound equals 0.0734 barrels.

Hot Oil Report

TEXAS COMMITTEE FILES ITS FINDINGS AND SUGGESTIONS

AUSTIN.

THE Texas Senate Investigating Committee last week filed its report which included findings related to the oil investigation. Most of this part of the report was prepared by Senator Joe Hill of Henderson, Rusk County, Texas.

While most observers were of the opinion that the report made no serious disclosures unfamiliar to those who had followed the investigation, particular interest was expressed in the testimony of Captain E. N. Stanley, chief conservation law enforcement officer for the Railroad Commission.

The committee's recommendation that the attorney general investigate the activities of the Texas Petroleum Council had been forecast by members of the committee, as well as the recommendation that a suit be instituted for revocation of the organization's charter.

It was signed by Senators T. J. Holbrook of Galveston, Tom DeBerry of Bogota, and Joe Hill of Henderson.

The committee's report made the following recommendations:

1. Legislation preventing former assistant attorney generals from participation in suits against the state for two years after termination of their services.
2. Repeal or amend the confiscation law, so as to prevent oil being moved as a matter of privilege or political preferment.
3. Limit receivers' fees.
4. Unless the evils complained of are eliminated, the only recourse will be to take jurisdiction out of Travis County.
5. The committee should be continued.

An abstract of the committee's oil report follows:

Stanley-Sadler, Inc.

On February 1, 1935, Chief E. N. Stanley left the commission, and on October 1, 1935, resumed his service. During the interim he was a partner of G. A. Sadler, and president of Stanley-Sadler, Inc.

(At a later hearing) Books of Stanley-Sadler were produced, showed the company had done a gross business of $73,000 from February 1 to December 15. Less than $5000 was received from actual engineering work. "In A. & P. Pipe Line and Roy I. Davis case, Stanley was head of the commission in East Texas when tenders on 100,000 barrels (for each company) were rejected, in both of which cases Stanley-Sadler took a contingent basis contract to move the oil and received approximately $15,000."

In the Gary Reclamation Plant case, Stanley was employed as an impartial agent of Federal Court to investigate oil sought to be moved by injunction, and received $500. On the same day, the firm received a check for $500 from Neal Powers, attorney for Gary. Sadler testified that while his associate, Stanley, was engaged by the court, he was engaged as a witness for the plaintiff. "The firm deposited both checks on the same deposit slip, both checks coming from Powers."

The testimony of Stanley on December 14 and on January 2 "greatly conflicted." His services as an engineer were at a figure wholly without precedent . . . Stanley professed to have no interest in the $44,700 received from Tyreco, but from wholly reliable information which the committee is not at liberty to disclose, it was later made known to the committee that in fact Stanley did have an interest in the movement of this oil.

There exists an imperative public necessity that complete investigation be had of private activities of other persons charged with responsibility of enforcement of oil laws . . .

Oil Confiscation Law

The law is described. "Until December 1, 1936, 51 cases had been filed by the attorney general, involving 4,604,342 barrels. Thirty-one cases were disposed of involving 3,422,735 barrels. There remain 14 cases involving 989,424 barrels. Total net proceeds were

POSTPONE HEARING

Anti-trust arraignments now set for March 3

MADISON, WISCONSIN.

JUDGE Patrick T. Stone late Thursday postponed scheduled arraignment of 17 defendants in the government's "oil conspiracy" case until March 3.

The defendants were to have appeared here Monday to enter pleas to indictments charging violation of the anti-trust laws in the operation of buying programs in the East Texas and Mid-Continent fields. They had waived removal hearings.

Change in arraignment plans came at the request of defense counsel and was made over objections of government attorneys. H. H. Thomas, defense attorney, was advised that the postponement was made in a telegram received from Wausau, Wisconsin, where Judge Stone is holding court.

Defense attorneys asked that arraignment of individual defendants be postponed to make it unnecessary for the oil officials to make a trip to Madison for the mere formality of entering pleas.

The change in arraignment plans is only as to individual defendants here Monday. Defense counsel will enter pleas on behalf of 26 major oil companies charged in the indictments.

$868,776; expense allowed, $47,652. A breakdown of those figures: Gasoline 109,637 (barrels); kerosene 4832; gas-oil 24,393; distillate 5786; crude tops 77,941; straight crude 48,838; weathered or reduced crude 967,430; fuel oil 2,182,651; bottom oil 1000; slop 215.

This oil and products brought an average price of $0.2538.

In 18 of the 37 cases, petitions were filed and judgment entered the same day. In three cases, the judgment was entered the next. "This would seem to clearly indicate that there was not much resistance to confiscation in over 50 percent of the cases filed . . . In numerous instances the owner of oil would hire an attorney on a contingent basis to procure a suit to be brought against him for confiscation of his oil. Certain firms seem to have been singularly successful in having their clients sued . . . In one case suit was brought on 1743 barrels of oil and 27,021 barrels was sold. In another case, 50,000 barrels was sued on with over 107,000 barrels sold. "In another case, two receivers were named on Saturday; were dispossessed on Monday, each received $3000 for one day's work. Their attorney received a like amount, a total of $9000 for one day's work.

Prices Too Low

"This fact is outstanding, that where there was any competition in buying, the price went up and the quantity involved did not become quite as great as in cases where there was no competition." In the River Slough case, 6269 barrels was sold at $0.9091, but "deducts ate up the proceeds . . . only $41.50 found its way into the treasury." Other cases were discussed.

"Based on the lowest possible market price prevailing at the time of the sale in these cases, approximately $2,000,000 worth of oil and products was sold, in many instances to the original owners, for considerably less than one-half the value."

"Viewing the whole situation of the operation of the confiscation law, the conclusion is inescapable that this manner of disposing of illegal oil has developed into a rank violation of the strict intention of the law . . . The mere fact that in most cases confiscation was procured by the owner demonstrates beyond cavil that the method has resulted in rewarding the offender and proved to be a convenient vehicle to move illegal oil or products . . . Appointment of receivers wholly inexperienced, their remoteness from the actual scene of operations, and compensation allowed them, are subject to severe criticism. The committee feels that . . . statutory right to appoint receivers should not be abused, neither should such appointment be made a means to reward politically influential friends or punish offending parties."

Venue in Travis County

The policy of Travis County venue was discussed, and its wisdom questioned. In conservation cases, records are maintained at division headquarters. Employes live near headquarters. They are called to Austin at State expenses. "It is inconceivable that the State's interest can be served only in Travis County. It is just as logical to

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Up 39,478 Barrels

TEXAS ALLOWABLE IS SET AT 1,329,478 BARRELS DAILY

AUSTIN.

THE Texas Railroad Commission issued a statewide proration order January 29 fixing an allowable of 1,329,478 barrels daily for the month of February. The commission estimated that the total Texas allowable under January orders would be 1,290,000 barrels on the first of the month. So the new figure represented a raise of 39,478 barrels daily. The new allowable is 126,078 barrels, or 10.5 percent, in excess of the February recommendation of 1,203,400 barrels daily made for Texas by the United States Bureau of Mines.

"It is the purpose of this order to balance current supply with current demand," commented Commission Chairman C. V. Terrell.

"The average daily withdrawal from storage in the United States during 1936 was 74,000 barrels. During the past two weeks this withdrawal has increased to 104,000 barrels daily, of which three fourths comes from Texas. We have allowed this additional oil to meet this demand.

"At our last proration hearing the undisputed testimony showed that there is sore need for the oil. The price increase announced yesterday is the best possible evidence of a firm demand."

The largest increase, some 18,000 barrels daily, went to the Southwest Texas district, but the raise was spread over the state generally. Increases of more than 1000 barrels were granted to 23 fields. Increases by districts are shown in the accompanying table.

The commission continued in effect its order in the East Texas field which permits production of 2.32 percent of the hourly potential. Duval County operators were granted a seven-barrel increase requested at the hearing. They contended that the average allowance of 23 barrels was too low, and asked for a raise to 30 barrels per well.

[*Continued on page 45*]

Texas Allowables by Districts

DISTRICT	Allowable January 1	Allowable January 19	Allowable February 1
East Texas	447,861	449,517	451,000
Panhandle	71,335	71,749	73,835
North Texas	63,150	63,489	64,400
West Central	60,005	61,890	62,310
West Texas	151,026	156,651	168,968
East Central	62,747	65,937	66,930
Rodessa	29,125	28,195	34,475
Southwest Texas	187,507	196,682	215,611
Gulf Coast	176,151	180,882	191,949
TOTALS	1,248,907	1,284,801	1,329,478

STAY WITH BUREAU

Oklahoma operators ask 581,800-bbl. allowable

OKLAHOMA CITY.

OKLAHOMA producers January 28 asked the Oklahoma Corporation Commission to set allowable for the state at 581,800 barrels daily for February. This figure, identical with the recommendation of the United States Bureau of Mines, is an increase of 8800 barrels daily over the January allowable.

The increase, if approved by the commission, will be divided among flush pools. The Wilcox sand zone at Oklahoma City will get an additional 1800 barrels daily, giving it official output of 122,084 barrels. The north Bethel pool will be increased 500 barrels to 1500 barrels daily. The Wilcox sand at Billings and the Crescent pool will each get 500 barrels additional. The output for the new Moore pool will be increased 2000 barrels daily to give it outlet of 4850 barrels. The Hunton lime zone of the Fitts pool will be reclassified as a C pool and given output of 16,650 barrels daily. Previously this producing zone at Fitts has had a wildcat status.

SCHEDULE HEARING

Connally contraband oil act set for February 2

WASHINGTON.

HEARINGS on the hill designed to make the Connally contraband oil act a permanent statute will be held before the Senate Finance sub-committee February 12, it was announced by Senator Connally of Texas, chairman of the group, January 29.

Secretary of the Interior Harold L. Ickes, charged with administration of the law, will be the first witness, a large num- of witnesses, including both representatives of the oil industry and of the Texas Railroad Commission, as well as officials from other states and members of the tender boards, are expected to appear.

Effect of Floods

OPERATORS IN ATCHAFALAYA BASIN PREPARING LEASES

By CHARLES LEYENDECKER, Staff Writer

OIL companies operating in the Atchafalaya flood basin of the Louisiana Gulf Coast are preparing for the worst flood in history of the state. The Mississippi River already is at near flood stage. The waters now being emptied by the swollen Ohio River into the upper Mississippi valley are expected to send the "Father of Rivers" rampant over the Atchafalaya basin. Heavy snow that fell last week in northern Oklahoma, drained by the Arkansas River, are expected to add to the size of the flood. It has been predicted that waters will rise 10 feet above the 1927 flood level, the highest known to date. However, the crest is not expected for another three to four weeks. The water in the Atchafalaya River has already risen two feet, and the Ohio River as yet has not had any influence. The red, muddy waters of the Mississippi River already are backing up and flowing down the Atchafalaya, leaving it in no condition to handle the heavier volume that is certain when the Ohio River flood reaches this district.

To Exceed Levee Capacity

The size of the anticipated flood may be realized from government statements that the new levees constructed during the past few years will take care of 2,400,000 cubic feet of water per second, but that the Ohio River is dumping 3,000,000 cubic feet per second into the Mississippi.

Already the government is making preparations for evacuating the district 50 miles on each side of the Mississippi River. Army men, boats and trains are being concentrated to quickly move inhabitants from the region if it is deemed necessary to do so.

Companies with hundreds of thousands of dollars invested in the Atchafalaya basin are taking precautions now in an attempt to protect as much of their property and equipment as possible. Levees are being built, derricks are being anchored, as are tanks, roads and other material that might be lost.

It is likely that drilling tests in the anticipated flood area will be forced to shut down, and that producing wells will be closed for 30 days.

Thousands Are Invested

Companies that will feel the effects of the flood are: Pan American Production Company; The Texas Company; Humble Oil & Refining Company; Shell Petroleum Corporation and other concerns.

The Atchafalaya flood basin in the Louisiana Gulf Coast is considered one of the most favorable prospective major oil reserves of the Coast district, and at present is one of the most active drilling districts in the area.

Around 18 oil fields probably will be affected by flood waters if they are higher than the 1927 flood, and in addition a number of wildcat tests will be forced to shut down.

Garden Island Bay, at the mouth of the Mississippi River, will be in great danger. The levee here is but about 3 feet above flood stage. The Texas Company has several storage tanks and a pump station located next to the east levee, and if flood waters reach a level 10 feet higher than in 1927, these tanks are sure to be inundated. One well now is drilling at Garden Island. It has been suggested that the tanks may be moved before flood waters reach Garden Island, but this might require dismantling. However, it has been suggested it might be possible to float them out behind tankers or tugs by making them air-tight. Pumping equipment at the Garden Island pump station may be disconnected and moved

[*Continued on page 64*]

TEXAS OIL BILLS

Hearings are to be held during coming week

AUSTIN.

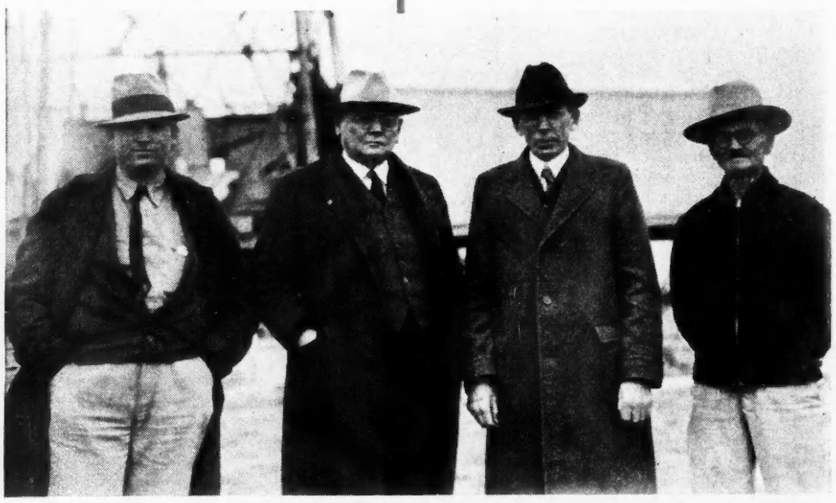
ORGANIZATION of House committees in the Legislature last week resulted in the announcement of hearings to be held this week on bills affecting the oil industry. Representative Eugene Worley of Pampa was named chairman of the House Oil and Gas Committee. This group will meet Wednesday night to consider a bill by Representative Davisson of Eastland, which would extend until 1941 the market demand law and the Interstate Oil Compact now in effect in Texas.

Representative Alf Roark has been named chairman of the Revenue and Taxation Committee. It will meet on Tuesday, February 2, to consider the bill by Representative Herman Jones which would substitute a net income tax bill for the franchise tax now paid by Texas corporations.

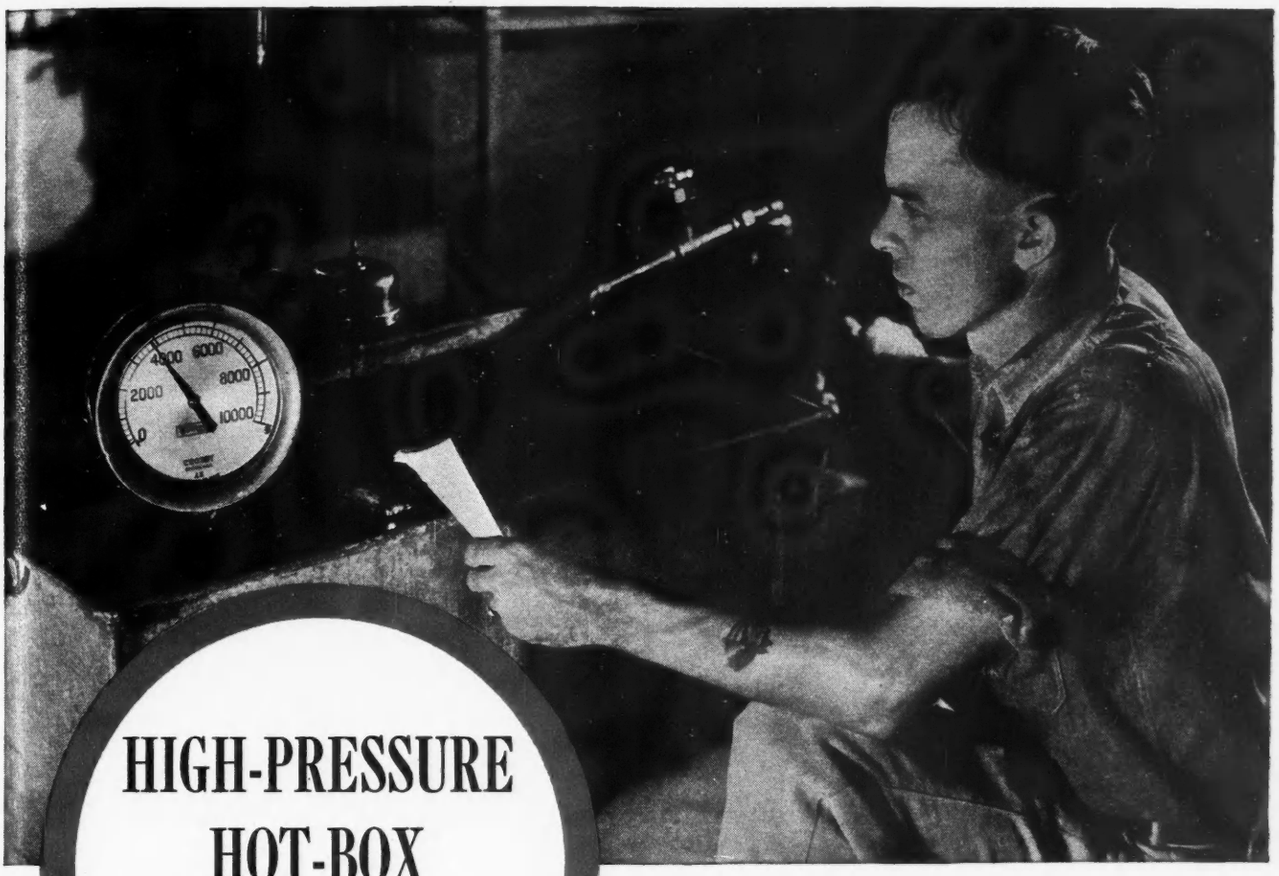
At a meeting of this committee on February 8, the Reed bill to increase the gross production tax on crude oil will be considered. This bill provides for a tax of 10 cents per barrel on $1 oil to supplant the present tax of 2¾ cents per barrel.

Interested in Strike

These men are watching the completion of Pantano Petroleum Corporation's McDougall 1, wildcat in the La Blanca area of Hidalgo County, with interest. The well discovered the deepest production (7867-75 feet) yet found in South Texas. From left to right: Carlton D. Speed, Jr., Houston, geologist for Pantano Petroleum Corporation, which drilled the test; Ross S. Sterling, former governor of Texas and president of Sterling Oil and Refining Corporation, Houston, which has purchased $840,000 worth of leases in the district and now is drilling an 8000-foot test; Burton McCullom, McCullom Exploration Company, which commenced the McDougall well, later taken over by the Pantano interests; and Carlton D. Speer, Sr., oil operator of Corsicana, who is one of the oldest active operators in Texas, having started in 1898.



(Photo courtesy George R. Pinkley geologist, Fohs Oil Company, San Antonio).



HIGH-PRESSURE HOT-BOX

TESTS 'STARCOR' UNDER DEEP-HOLE CONDITIONS

WHAT happens to cement in the bottom of a well, where pressures and temperatures are both high? This question is frequently asked. We decided to find out.

Lone Star research chemists built a high-pressure box, then put it in a high-temperature water bath. Many cements of varying composition were made into slurries and subjected to high pressures and temperatures. Results were carefully studied and reasons why some cements behave well and others do not were learned.

An Oil Man's Cement

This is one of many tests, made over and over again in the Lone Star research laboratories, part of the study required to answer the question, "How to make the kind of cement oil men are asking for?" Painstaking research produced the answer. We call it 'Starcor', the Oil Man's cement—because it gives the oil man the kind of cement he wanted, and not just our idea of what he should have.

Has Needed Qualities

'Starcor' is slow setting at high temperatures, easily pumpable in 16-lb. slurry, stays gel-like to resist mud contamination, also resists action of sulphate waters—and 'Starcor' hardens quickly to form a strong, dense, uniform core—you can drill out in 3 days. Chemical analyses of cuttings are usually the same, item for item, as the original cement.

Daily performance in deep, hot wells of mid-Continent and Gulf Coast territories conclusively proves that 'Starcor' is the cement oil men have been looking for.

Use 'Starcor' Next Time

It's a Portland cement—no admixtures used or needed. In 'Starcor', we have met a special need with a special-purpose cement—a cement with the same outstanding quality and uniformity as Lone Star and 'Incor'*—plus the special properties of an Oil Man's cement.

Use 'Starcor'* on your next job—see for yourself what an important step ahead it really is. Lone Star Cement Corporation, Dallas . . . Houston.

* Reg. U. S. Pat. Off.

LONE STAR CEMENT CORPORATION

Makers of LONE STAR CEMENT • 'INCOR' 24-HOUR CEMENT • 'STARCOR' CEMENT

MEN IN THE INDUSTRY'S NEWS

LAWRENCE BRADY, vice president of Stapper Petroleum Corporation, has been placed in charge of that company's office for South Texas, just opened in the Nixon Building, Corpus Christi. The company is headed by Edgar H. Stapper, of New York City. The company has commenced an 8,500-foot test in Cameron County as its first operation. Stapper was associated with Buckingham Oil Company in the drilling of the first producer in the McCampbell field, Aransas County.

D. N. JOLLEY, Shreveport consulting geologist, last week moved to Corpus Christi, Texas, where he has accepted a position as geologist with Conservative Oil Company. The firm has holdings in Southwest and East Texas.

ALBERT F. SHULTE, manager of the right-of-way department for Standard Oil Company of California, has retired after 35 years of service. Shulte joined the company's predecessor, Pacific Coast Oil Company, on October 17, 1901, as clerk in what is now the pipe line department. Shortly afterward he was made chief clerk of the department. Some time later he was transferred to the right-of-way division of the pipe line department and in June, 1919, was appointed manager of the newly created right-of-way department, which handles matters of right-of-way for all departments and subsidiaries of the company.

M. G. CHENEY, president of Anzac Oil Corporation and an authority on the geology of the Bend Arch section of North and West Central Texas, returned to headquarters at Coleman late last week from a business mission to New York City.

MANER GRAHAM has resigned from Gulf Oil Corporation to engage in business for himself. He will make his home at Tyler, Texas. Graham has been connected with the scout and lease departments of Gulf Oil Corporation since 1929, and has served in East Texas, Southwest Texas, Louisiana Gulf Coast, and more recently has been located at Marshall, Texas, covering the Rodessa and East Texas border counties.

JOHN M. LOVEJOY, New York, president of Seaboard Oil Company and of Inland Exploration Company, which recently was granted an oil concession covering practically all of Afghanistan, was in Houston January 28. Lovejoy is expected back in New York in time to attend the annual meeting in February of the American Institute of Mining and Metallurgical Engineers, of which he is president.

SAMUEL W. SELFRIDGE, who has been assistant manager of the right-of-way department of Standard Oil Company of California, has succeeded Albert F. Shulte, retired, as manager of the department. Selfridge came to the company on January 6, 1922, as an engineer and was assigned to fire prevention work in the engineering department. On April 1, 1923, he was transferred to the right-of-way department with headquarters in Los Angeles, and upon the retirement of Wm. C. Learmont in January, 1931, he was appointed assistant manager.

CARL V. SCHLAET, independent operator of Fort Worth, has been in Tampico, Mexico, recently looking after his interests in that vicinity.

W. A. BAKER

Is Promoted

W. A. Baker, who has been assistant comptroller of Shell Petroleum Corporation since 1933, has been appointed comptroller. He also will continue as assistant to J. W. Watson, vice president-treasurer, whose executive office formerly combined the comptroller's duties. Baker joined the Shell organization in 1927 as an assistant to the head office accounting department of Shell Oil Company in San Francisco, California. Before his transfer to St. Louis in 1933 as assistant comptroller of Shell Petroleum Corporation he gained a broad experience on the Pacific Coast as general auditor and latterly assistant operations manager of Shell Oil Company. These duties, together with the opportunity afforded through special assignments involving surveys of the company's activities in the field, brought him in close touch with all branches of the organization both in the area of operations and head office.

GEORGES VORBE, who has been geologist at Midland, Texas, for Stanolind Oil & Gas Company, has resigned. Prior to his connection with Stanolind Oil & Gas Company, Vorbe was with Texas Pacific Coal & Oil Company, as district geologist and manager of the Midland office.

MICHAEL P. BRADY, who has had charge of cleanout tools for Magnolia Petroleum Company in the Iatan district, West Texas, for a number of years, has been placed on the retirement list after completing 18 years of continuous service.

JOHN I. and **P. D. MOORE,** brothers, consulting geologists and the most active independent wildcatters in West Texas for the past two years, have moved their headquarters from San Angelo to Midland, where offices have been established in the Petroleum building.

THEODORE R. BIBEE, purchasing agent of Mexican Gulf Company at Tampico, Mexico, was in Houston for a few days recently.

W. L. NAYLOR, assistant comptroller of Gulf Oil Corporation, has returned to his headquarters at Pittsburgh after a trip to Tulsa and Houston.

ERLE P. HALLIBURTON, president of Halliburton Oil Producing Company and Halliburton Oil Well Cementing Company, was a recent Houston visitor.

H. B. STENZEL was the speaker at the regular weekly meeting of the Houston Geological Society January 28, discussing the correlation of the Claiborne from Northeast to Southwest Texas.

K. N. SAATJIAN, of The Texas Company, Los Angeles, has been appointed chairman of the Engineers' Sub-committee of the American Petroleum Institute's Division of Production Committee on the Standardization of Wire Rope and Manila Cordage. The appointment was made by C. C. Scharpenberg, national chairman of the divisional committee.

DR. J. F. M. TAYLOR, president of Shell Development Company, San Francisco, has been appointed member of the American Petroleum Institute's Advisory Committee on Fundamental Research on the Composition and Properties of Petroleum. Dr. Taylor succeeds Dr. D. Pyzel, also of Shell Development Company, who resigned.

CHRISTIAN M. DREDGER, for 30 years manager of the company's statistical department, retired January 1, after 46 years of service with the Socony-Vacuum Oil Company, Inc. He entered the employ of the company in 1891 and was made department manager in 1907. He is recognized as one of the foremost statisticians and authorities in the petroleum industry. In addition to directing the foreign and domestic statistics, he was

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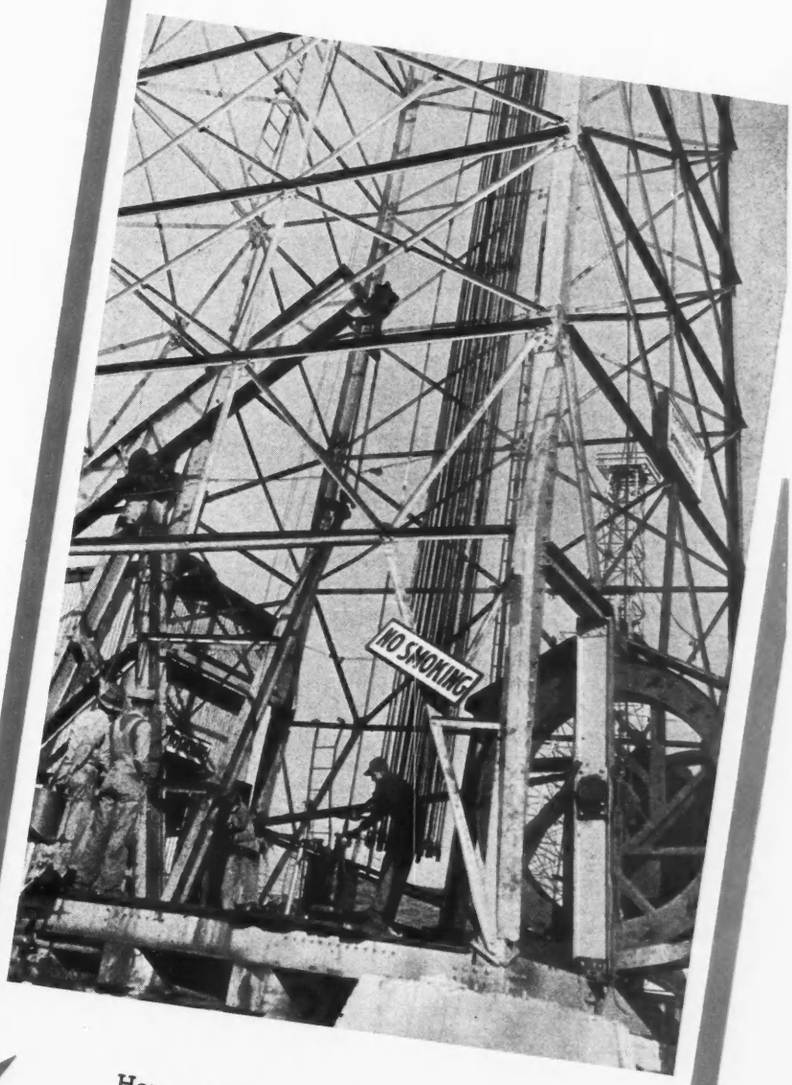

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also active in such departments as service, distribution, and claims. At the time of his retirement, about 125 of his associates tendered a testimonial dinner to him at the New York Athletic Club. A. J. McIntosh, who has been associated with Dredger in the statistical department for 25 years, was toastmaster. Other speakers included A. T. Roberts, assistant treasurer; R. S. Durkee, comptroller; W. H. Correa, general manager of the lubricating department, and A. D. Stewart of the statistical department of Socony-Vacuum Oil Company.

E. B. KLINGER, formerly of San Angelo, Texas, has been placed in charge of the geological department established last week by Lion Oil Refining Company of El Dorado, Arkansas. Mr. Klinger is a graduate of Pennsylvania State College.

BART A. MEYERS, Tropical Oil Company, subsidiary of International Petroleum Company of Toronto, Canada, was a visitor in Houston during the week.

CLARENCE SUCCOP, president of American Roller Bearing Company, of Pittsburgh, accompanied by C. L. Knaak, has returned to Pittsburgh from a trip through the oil country from California on East.

J. C. AXELSON, president of Axelson Manufacturing Company, Los Angeles, has returned to California following a trip through the Mid-Continent oil country.

ENGINEER MANUEL SANTILLAN, former subsecretary of Mexico's national economy, has been appointed general manager of Petroleos de Mexico, S. A., (Petromex), succeeding Engineer Pascual Ortiz Rubio, ex-president of Mexico, who resigned to devote his attention to private affairs. Santillan has for many years held the distinction of being one of Mexico's leading geologists.

LEE C. LAMAR, Carter Oil Company will present a paper on the geology of the South Burbank pool at a meeting of the Tulsa Geological Society Monday, February 1. The paper was written by himself and E. O. Markham.

R. G. MOSS, Phillips Petroleum Company, has been transferred from San Antonio, Texas, to Wichita, Kansas, to succeed John F. Kinkle, deceased, as division geologist.

L. L. PALMER will be division geologist at Wichita for W. C. McBride, Inc. He succeeds Edward Koester, who joined Darby Petroleum Company on February 1.

T. C. HUGHES, W. F. Braun and Gordon Lowe, were reelected president, vice president and secretary respectively at a meeting of th Old Timers Quarter Century Engineers Club of Oklahoma last week. The services of each member of the club were tendered Dr. Cary T. Grayson, national chairman, American Red Cross, to assist in the flood zone of the Ohio valley or Mississippi river district.

DAVE C. STEWART, PIONEER PIPE LINE MAN AND BUILDER OF MANY CROSS-COUNTRY SYSTEMS, DIES

»

RETIRED SIX YEARS AGO AS AN EXECUTIVE OF MAGNOLIA PIPE LINE COMPANY

»

DAVE C. STEWART

DAVE C. STEWART, 73, retired vice president and general manager of Magnolia Pipe Line Company, died January 23 at his home in Dallas. He had experienced failing health for several years. Stewart served various Standard Oil Company pipe line units about 50 years, and for several decades was rated as the outstanding builder of cross-country pipe line systems.

Stewart was a native of Franklin, Pa. Before attaining his majority he obtained a job with National Transit Company digging ditches at Cherry Grove, Pa., for 17½ cents per hour. He transferred to Northern Pipe Line Company, and later joined Buckeye Pipe Line Company to take part in pipe line construction work in Ohio. Having won recognition as a builder, he was engaged by Eureka Pipe Line Company for duty in West Virginia, and built the first trunk line into Kentucky. Shortly after the turn of the century he moved to Kansas to take part in pipe line projects by Prairie Oil & Gas Company, which was then functioning as a producing and transportation company, and later entered the services of Muskogee Pipe Line Company to construct a trunk line system in Oklahoma.

All the long lines comprised by Magnolia Pipe Line Company's four-state system were built under the direct supervision of Stewart. He was summoned from Oklahoma in 1911 by officials of Magnolia Petroleum Company shortly after it succeeded John Sealy & Company to build an 8-inch line from the Electra field, Texas, via the company's refinery and original oil properties at Corsicana thence to Beaumont. Stewart was elected a vice president in 1913, and also became a vice president of Magnolia Pipe Line Company when it was formed December 15, 1925, to take over the pipe line system. He reached retirement age in 1931, but continued to maintain an office in the company's building at Dallas for several years in order to be near his former business associates.

Stewart was a tireless worker. On some of his major pipe line construction jobs he is credited with working 4,000 men with picks and shovels and pipe tongs. His most difficult projects were completed without aid of modern machinery and transportation. He preferred to remain on the job and use a travelling bag for an office rather than to depend on subordinates.

ELMO THOMPSON, vice president of the First National Bank of Tulsa spoke before a meeting of the Petroleum Accountants Association held Friday, January 29, at the Mayo hotel. His subject was "Banking and its Relation to the Oil Industry."

WILLIAM E. HART, 76, veteran oil man of Oklahoma, died suddenly in Oklahoma City on January 27. Hart had been an employe of Gypsy Oil Company (now Gulf Oil Corporation) near Sapulpa for 21 years, before moving to Oklahoma City and later to Tulsa. Funeral services were held at Sapulpa.

DANIEL STANLEY SETNAN, 52, secretary of Wellington Oil Company of Delaware, Ltd., died at San Antonio January 18. His remains were sent to Los Angeles for burial. Setnan was well known in the oil business in South Texas, having come to this area as an official of Wellington Oil Company of California, which was formed just prior to the drilling of a well on the Parks Ranch in Goliad County, Texas. He is survived by a daughter, Dorothy Setnan, a son, Marshall, and two brothers and one sister.

L. E. HODGES, general manager of Portable Rig Company, Houston, is making a tour through the fields of North and West Texas, New Mexico, Oklahoma and Kansas.

JOHN FITZGERALD, 77-year-old pioneer independent oil man of Bartlesville, Oklahoma, died January 27.

JOHN A. LENERTZ, 48 years old, died in Research Hospital at Kansas City, January 25, where he had been suffering from a heart ailment. He had been at the hospital since shortly after Christmas. Lenertz was manager of the state tax department of The Empire Companies since July, 1921. Following his graduation in law from the Notre Dame University in 1910, he engaged in its practice for eight years at Lawton, Oklahoma. He joined the valuation department of the Empire in October, 1918, and the following spring was moved into the tax department. He was licensed to practice in all state and federal courts.

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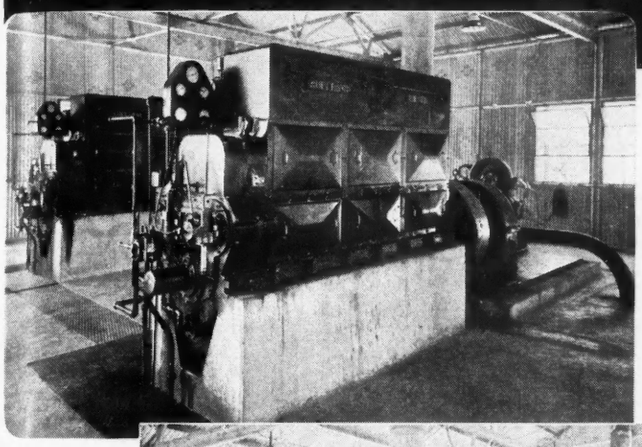

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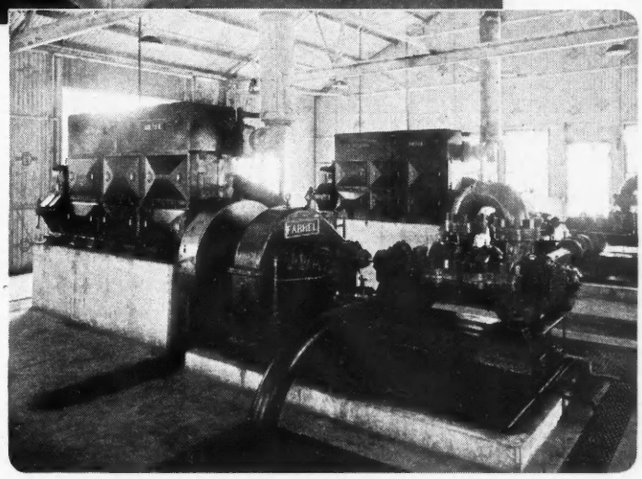

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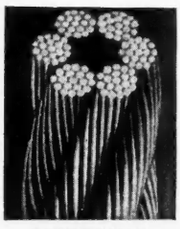

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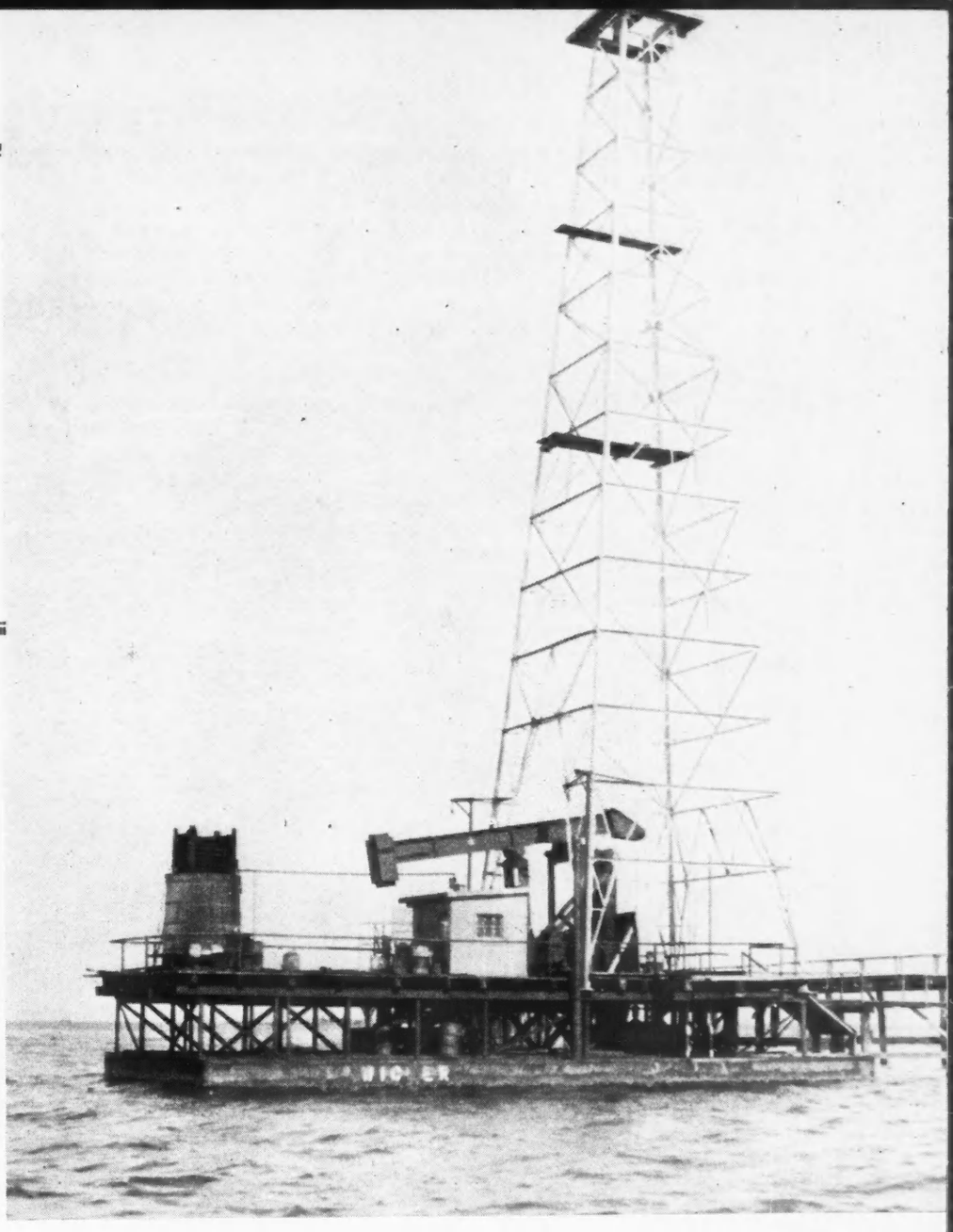


The latest addition to the barge family is a pumping barge that carries all equipment. This one is in use at Lake Pelto.

Special Equipment Advances Marine Drilling Practices

By BRAD MILLS, Associate Editor

DEVELOPMENT of oil fields along the Louisiana coast line has led to many novel reconnaissance, drilling, production and transportation practices. The swampy and submerged lands skirting the open gulf have yielded a dozen good oil fields, several of which lie almost entirely under water. Operators are handicapped from the first reconnaissance work to the movement of oil from these unusual fields, but development of special equipment for all phases of operations has turned the water handicap into an agency that permits normal field work.

All Transportation By Water

No highways serve oil fields along the edge of the open gulf. It is necessary to travel by water from a few miles to more than 30 miles in reaching the producing areas. Canals, bayous, lakes, rivers and bays are used to form a winding water trail that

serves almost every transportation purpose. Most of the producing fields also may be reached from the open gulf by small boats, but the principal approach is by bayous and canals that touch the nearest highway.

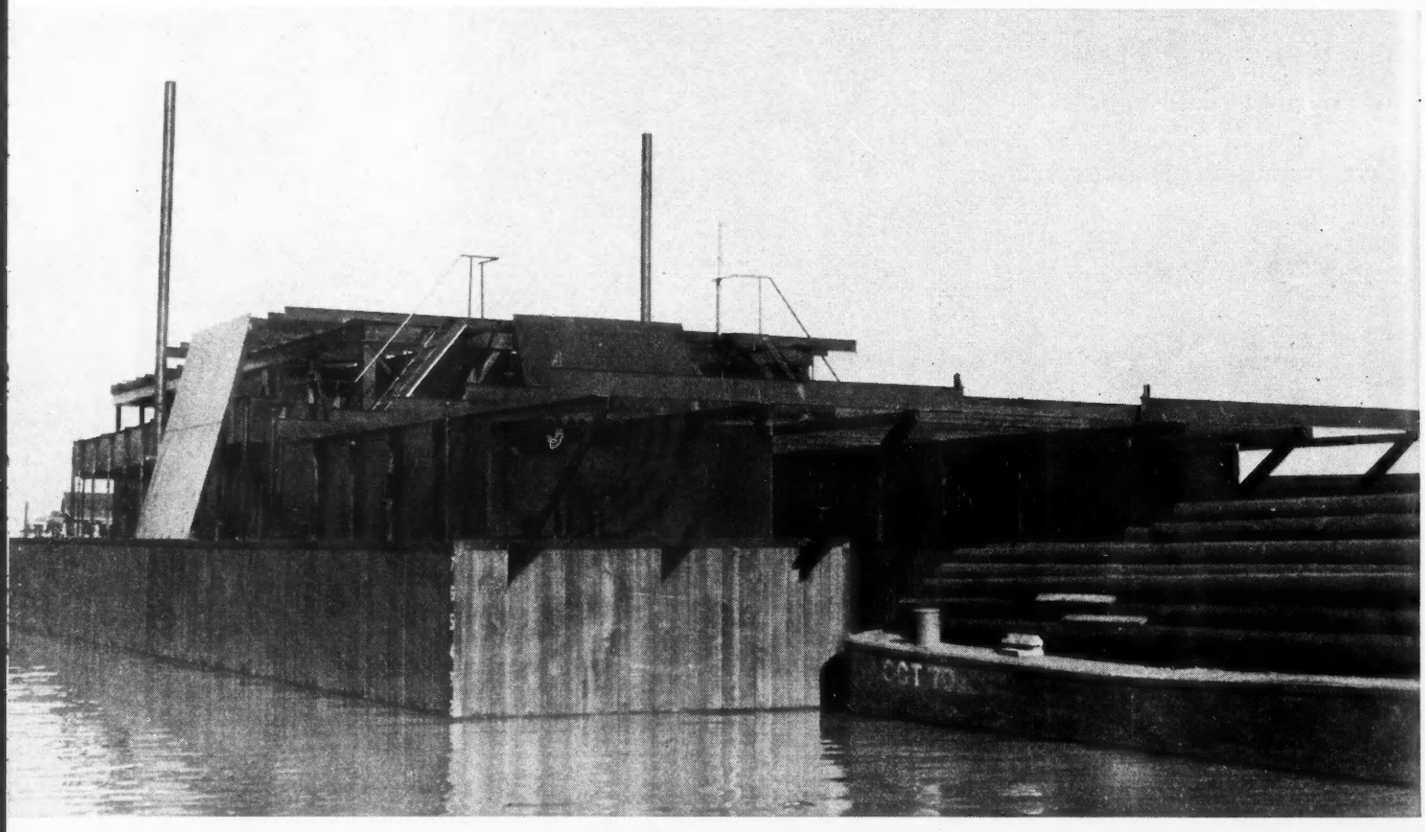
Improved highways fall far short of full penetration of the outer coastal strip, a narrow and submerged belt that has yielded many prolific oil fields. The end of these roads usually mark the "jumping off" place for traffic intended for the isolated oil fields and prospects under development.

Natural waterways are used to reach a few of the most accessible areas, but artificial channels usually are required to span the gap between the highways and producing fields. A depth of five to seven feet is required for normal water transportation. Work done by the United States government has helped to establish a network of canals along the coast line, but the oil companies have contributed a great deal through the dredging of short canals that touch the main arteries.

Oil companies operating along the Louisiana coast line have been forced to develop a new reconnaissance, drilling, production, storage and transportation technique. Difficulties appear when an isolated water area first falls under serious consideration. The fight continues from the time the geophysical and geological crew arrives until the oil is safely moved to market. All down the line the marshes water, rains, isolation, poor foundation facilities, and hurricanes add difficulties and excitement to the most unusual oil field area in the world. The work is not all grief, however, and most of the men enjoy the pioneering aspect of the assignment.

The geophysical crew paves the way and usually suffers the first hardship. It is necessary for the men to ride, walk, crawl, wade and swim in the course of mapping an area, but recent improvements in methods and equipment have reduced the drudgery connected with various phases of geophysical work. The equipment is much lighter than that used a few years ago, and improvements in "swamp buggies" (see The Oil Weekly, January 18, 1937) have reduced the transportation hazards.

Perhaps the most interesting outgrowth of marine operations along the Louisiana coast has been the development of the drilling barge. All early drilling work was done with piling or mats as foundations for derricks. The shifting nature of the marshy soil resulted in a sharp sinking action of derrick foundations that prevented normal drilling operations under extreme conditions.



Late type drilling barge hull and super-structure before equipment was installed. Heavy creosoted boards protect the steel hull in several ways. Without equipment the barge draws less than two feet of water.

Drilling Barges Big Help

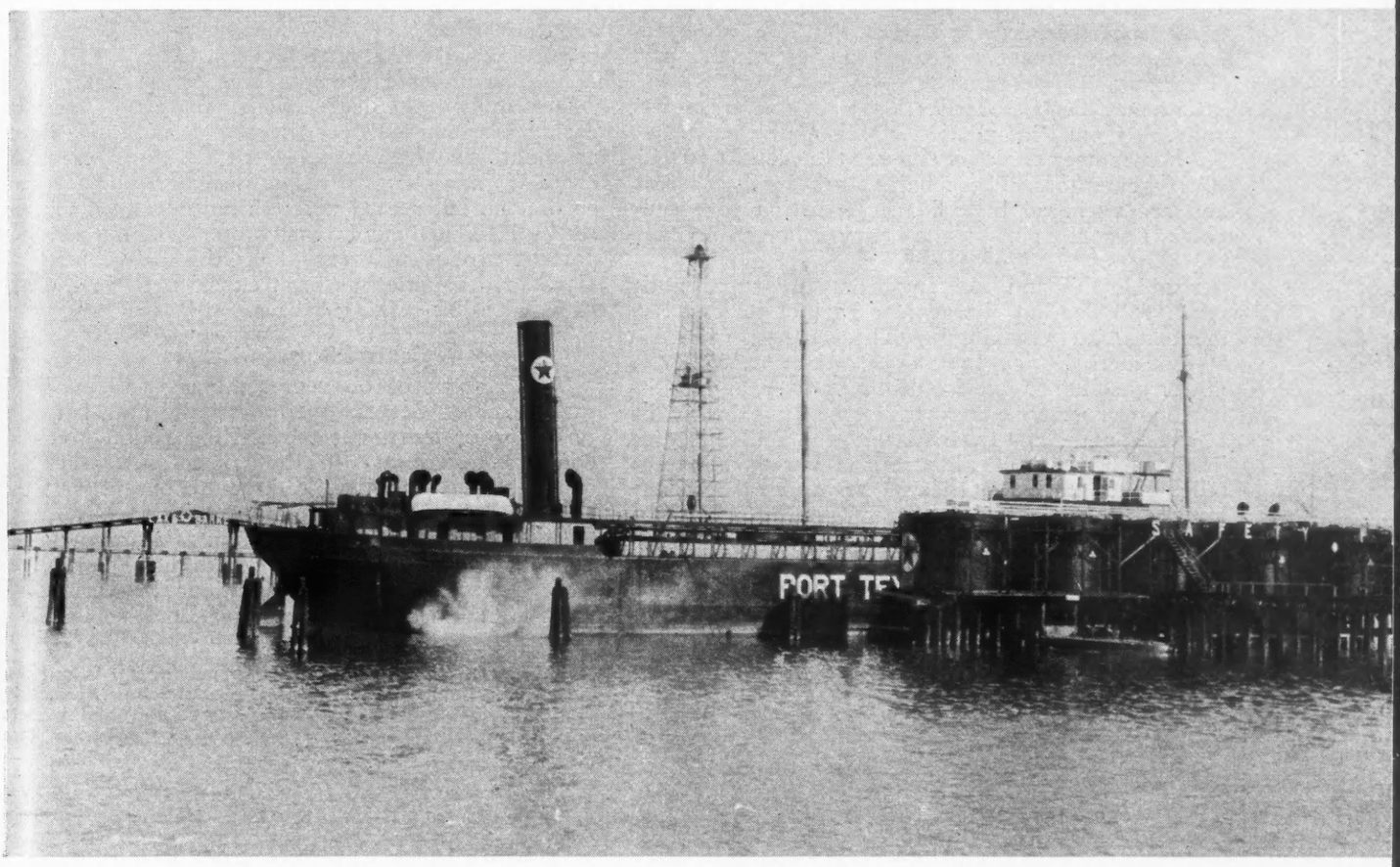
The development and use of steel barges that are submerged or floated at will stands as a distinct contribution to drilling progress. These giant barges carry full rotary drilling outfits, including heavy steel derricks, and have lowered development costs in all fields where they have operated in competition with other types of derrick foundations. Drilling may be started in a fraction of the time required for the conventional piling type pier foundation.

Drilling on floating barges has been a common practice for a generation, but use of large steel barges that are towed into position, sunk by allow-

ing water to enter special compartments, and made into full well foundations is a comparatively recent development. The use of such barges obviously is limited to shallow water and to areas affording an almost level bottom. Bay and lake bottoms along the Louisiana coast line usually are nearly level, and sinking the heavy barges gives a full and immediate well foundation.

A dozen salt domes along the coast line are ideally suited to this type of well foundation. Most of the fields and prospects are partially covered by water, but recently barges have been pressed into service in marshy areas that are not covered by water. In the latter type of field, the barges are floated to location through canals and sunk in the usual manner. Most of the coastal area is so low and marshy that water will immediately fill a network of canals in a new field.

Steel tanks and an old tanker provide oil storage in the Lake Barre field. The ship also serves as field headquarters.



The Texas Company has pioneered the floating-sinking barge construction, having been the first to recognize the possibility of such a well foundation. A search of the United States patent office disclosed that patent No. 1,681,533 had been issued to Louis Giliasso, a licensed sea captain, who had invented the submersible drilling barge after observing and studying drilling operations in Venezuela, where derricks were mounted on piling. The "Giliasso" was the first submersible barge built by The Texas Company under exclusive license from the patentee.

All the first barges built were made in two sections. The dimensions of the first barges, taken as a unit, were 56 by 100 by 10 feet, the first two figures representing the width and length, and the last representing the depth of the hulls. Each section of the barge was 24 by 110 by 10 feet, with an eight-foot separation between them. The thickness of the copper-bearing steel plate was five sixteenths of an inch. Each hull had eight compartments, all equipped with special sea cocks for sinking operations.

Several variations in construction features have been followed to meet conditions. Two of the newest barges are slightly larger than the first built, while the slotted construction, rather than the twin-hull construction, has been used on occasion. The latter type is open from the center to one end to permit "backing off" when wells are completed.

With submerged barges it has been found that 136-foot derricks remain vertical during severest drilling operations. The original fear that the barges might settle and stick on bottom was not well founded, and in more than 130 moves only one barge has refused to rise. It was quickly freed by pumping water through jets provided for such an emergency.

The heavy steel super-structure elevates the derrick floor about 12 feet above the top of the barge proper. The twin hulls also are heavily braced to prevent trouble in case the unit should rest on a slight sand bar at each end and be unsupported in the middle, rest unsupported in the middle to force the side edges to carry the load, or that it should settle on a high spot in the center to give the outside edges no support.

The barges are floated and moved with ease. To

float most of the barges with all equipment, it is necessary to lower the water inside the hulls to a point about four feet below the outside water level. The water ordinarily is removed by centrifugal pumps. Time required for getting away from a location is only two or three hours, while it requires little more than 24 hours between finishing one well and starting another.

Corrosion Is Reduced

A recent improvement in barge construction was the placing of a full protection of heavy creosoted boards around the hull. This practice provides a good protection and reduces corrosion. Submersible barges have been used by The Texas Company in the Lake Barre, Dog Lake, Pelto, Garden Island, Leesville, Caillou Island, Four Isle and Lafitte fields.

Submersible boiler barges also are used, but they are much smaller than the drilling barges. Four large boilers are mounted on each barge, two at either end to provide a good balance. These smaller barges are located near the drilling barges, and it is necessary to make only a few connections to complete this part of rigging up operations.

Ordinary floating barges also are used as power units. A typical installation of this type carries two 242-horsepower crude oil engines that drive two 219-KVA generators. These barges are 24 by 68 feet, and are anchored in a floating position to supply power to equipment on the heavy submersible drilling barges.

Humble Oil and Refining Company successfully used "full floating" barges for part of its development at Lake Washington. These barges carried a 96-foot steel derrick, light draw works, a 125-horsepower gasoline engine for drilling power, and an 80-horsepower gasoline engine for operating the 5¾ by 10 slush pump. The Lake Washington field is located in the delta area of Plaquemines Parish, about 45 miles south of New Orleans. No highways of any kind serve the immediate area.

Lafitte Operations Interesting

The first wells completed in the Lafitte field were drilled with the derricks on mats, but the third and all subsequent wells were drilled with large barges. Foundations in this marshy field were a genuine problem until the submersible barge was pressed into service. It was necessary at one time to jack up one side of a mat 14 inches. The second foundation mat sank about three feet during drilling operations, but the sinking was uniform enough to keep the derrick almost straight. The first derrick was specially braced for running 130 tons of 7⅝-inch casing, but a check after running the casing showed that the derrick had settled about two feet from its original level. The second mat used as a well foundation contained more than 130,000 feet of lumber.

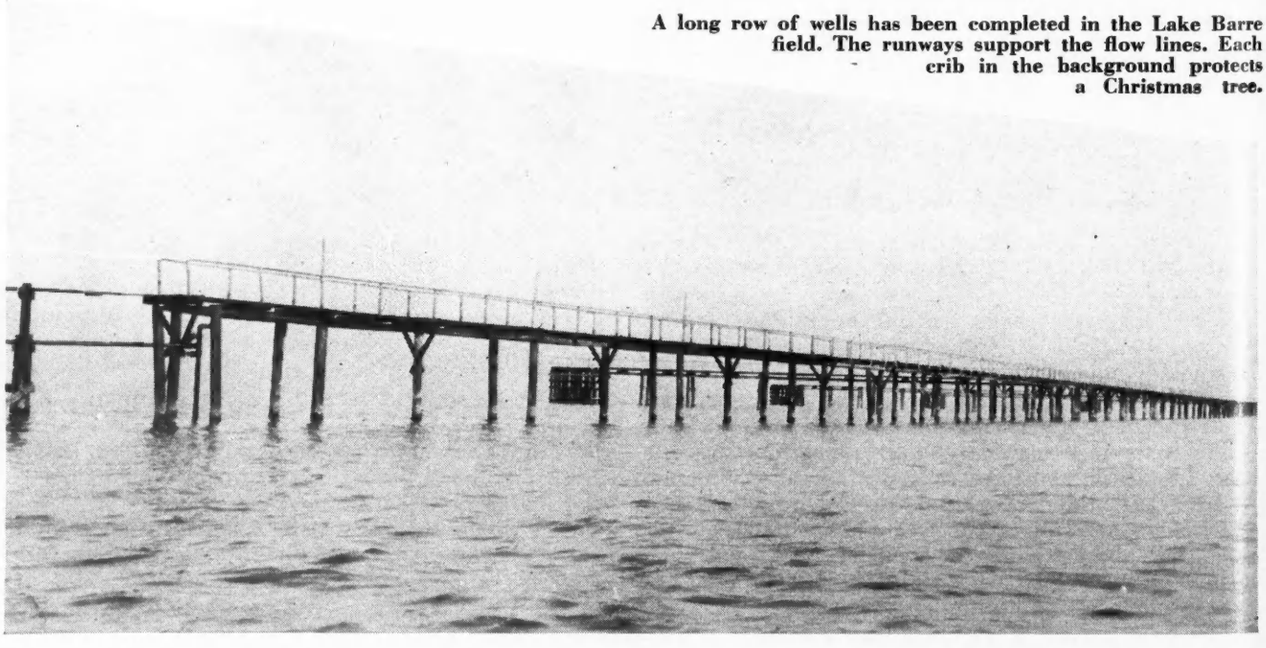
The depth of wells along the marshy strip ranges from 1100 to more than 10,000 feet. The second deepest commercial production in the world has been developed in the Lafitte field, a remarkable producing area. The deepest completion in the area is 10,244 feet.

It is believed that the Lafitte field has established a record for the consistent carrying of open hole. A string of 13⅜-inch casing usually is cemented at about 1800 feet, and open hole carried to bottom. It is not unusual to carry as much as 8500 feet of open hole. The indicated bottom hole pressure is above 4000 pounds in the deeper wells. A string of 7⅝-inch casing is cemented over the producing zone, either at about 9600 feet or below 10,000 feet, depending on the formation to be tested. Regular casing is run on bottom, but special upset casing is run on too for strength. This field is easily one of the most important producing areas along the Louisiana Gulf Coast. No trouble has been experienced in the use of submersible drilling barges.

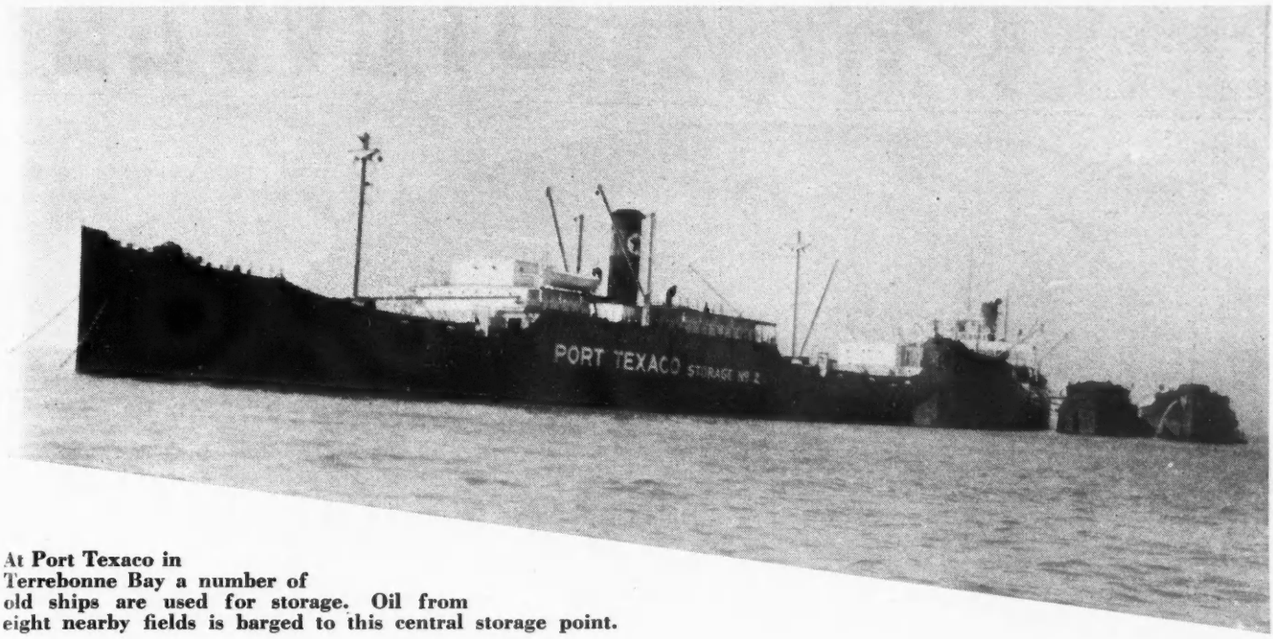
Central Storage Barges

The storage of oil represents a problem in all marshy fields. Several operators build tank batteries on piling or mats, but the settling action gives no end of trouble in most of the fields. A few years ago one operator flowed wells direct to barges, but the practice did not become common.

The necessity for centralization of storage caused The Texas Company to establish headquarters at Port Texaco, a base of operations in Terrebonne Bay. A number of old Shipping Board ships have



A long row of wells has been completed in the Lake Barre field. The runways support the flow lines. Each crib in the background protects a Christmas tree.



At Port Texaco in Terrebonne Bay a number of old ships are used for storage. Oil from eight nearby fields is barged to this central storage point.

been converted into storage tankers, each ship holding about 75,000 barrels. Oil from seven or eight nearby fields is barged to Port Texaco for storage. Large ocean tankers drop anchor a few miles from Port Texaco, and after picking up the oil sent via small barges, take it to Port Arthur, New Orleans and other world ports.

Until recently all oil movement from the area was by water. Two short pipe lines have been built to serve the most accessible fields. The favorable location of the Lafitte field warranted construction of an eight-inch pipe line to New Orleans. For some time southeastern Louisiana was the only large oil producing district in the world not served by a pipe line outlet. The distance of the water haul between fields and navigable water ranges from a few miles to more than 100 miles. The transportation cost varies from six cents to 30 cents per barrel. The routes followed are interesting, the distanced traversed often being several times as great as the air line between the source and the terminal.

The ocean-going and deep river barges are of all-steel construction and their capacity ranges from 2000 to 18,000 barrels. The largest barges are 40 x 20 x 200 feet and draw about 15 feet of water when loaded. The smalest barges are 30 x 6 x 168 feet and draw about five feet of water when loaded. Still smaller tanks are used for short hauls in canals and in protected waters.

An improved design of tug is being used for handling the heavy oil barges. They range from 60 to 450 horsepower, and draw from four to 10 feet of water. Diesel engines are used as prime movers, and loaded barges can be towed four miles per hour under good conditions. Most of the oil produced in the district is temporarily stored, gauged, shipped by tug to a central point, and finally barged to tankers for final disposition. Oil from a few fields, however, is barged to New Orleans, Port Arthur or other points in one operation. The Garden Island field is ideally located for heavy oil barging to New Orleans or to gulf points. Other fields widely scattered over southeastern Louisiana find daily outlets for daily production through waterways of every type.

An elaborate radio-telephone system has been developed by The Texas Company. It consists of a number of combination broadcasting and receiving stations, each a complete unit. One wave length is used by all stations and communications is by voice. The central station is located near Houma, with smaller stations in all fields in the marshy district. Business of every type is transacted over the radio at appointed hours, but it is possible to cut in at any time with an emergency call to the main station. Progress reports from the field, lease and well data, requests for material, and orders for the day are sent back and forth during the broadcasts. Due to regulations all stations must be on boats to comply with government requirements.

The Texas Company has for some time used an amphibian plane in the marshy district. The superintendent can reach any of the fields from headquarters at Houma in a fraction of the time required by automobile and boat.

Pollution Has Been Reduced

Precaution against pollution of lake, river, bay and canal waters has reduced damage to a minimum. Humble Oil & Refining Company has developed an effective guard against pollution around tank batteries in the Lake Washington field. Any oil spilled around the tanks is caught by a special drain. No loss of oil to canal waters has been observed since the arrangement was perfected. All operators brace and protect Christmas trees by various methods.

Wind is a strong factor in water operations in the marshy area. Most of the bays, lakes and canals are affected by the tide and the water is salty. From March to November the prevailing wind is from the Gulf of Mexico, and during this period, water in the bays, lakes and canal is plentiful. The wind aids the tide and helps to keep water in the channels. During the winter season the prevailing wind is from the interior, and during a part of this season the water level is low. When a severe "norther" strikes, the water is blown out to the gulf, and a considerable time is required to replace it.

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EXACTING PROCESS *follows the sucker rod steel from ore through smelting and steel-making into scientific upsetting to insure proper grain structure and fiber. Heat-treatment starts in this huge normalizing furnace where "OILWELL" sucker rods are normalized over their entire length in one heat.*

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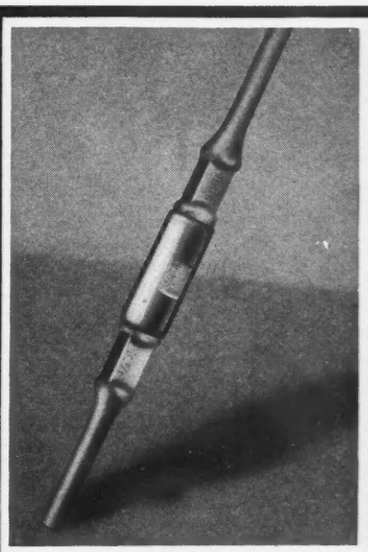
This full heat-treatment process is an exclusive "OILWELL" development and the manufacture of our sucker rods is protected by basic process, product, and equipment patents.

"OILWELL" Fully Heat-Treated Sucker Rods render maximum service. That is why we say — look to "OILWELL" for the best in sucker rods.



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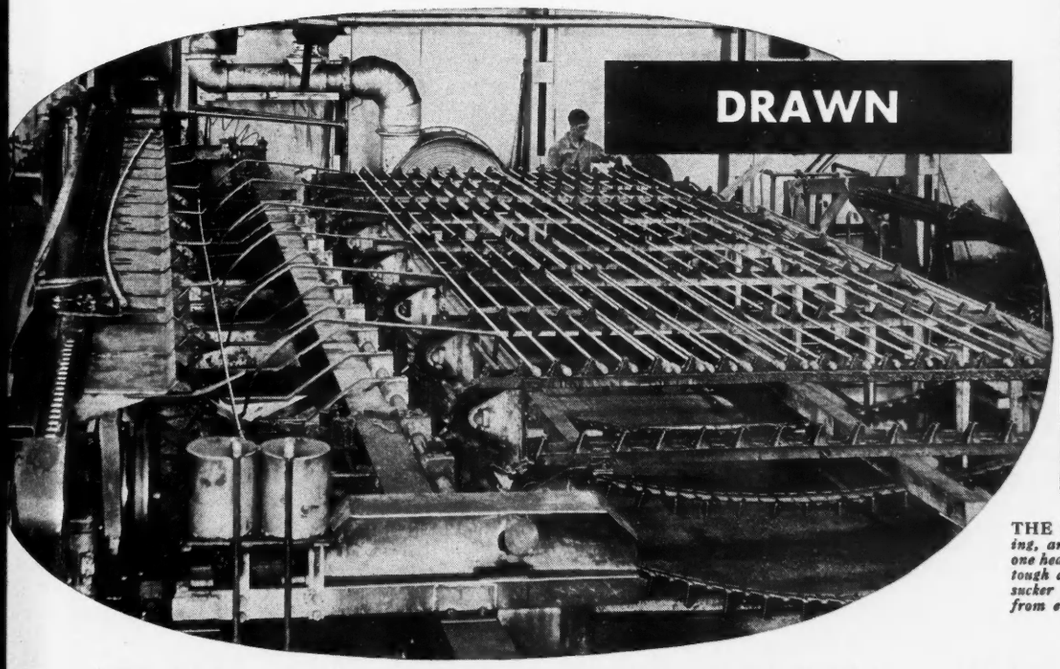

THE RODS, *after normalizing and quenching, are drawn (over their entire length in one heat) and proof tested. The rods are now tough and ductile—to the proper degree for sucker rod service—and of uniform quality from end to end.*

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CONSTANT CONTROL OF LEVEL IN OUTPUT TANKS IS AID IN

Water Flood Operation

By FRANK B. TAYLOR, Staff Writer

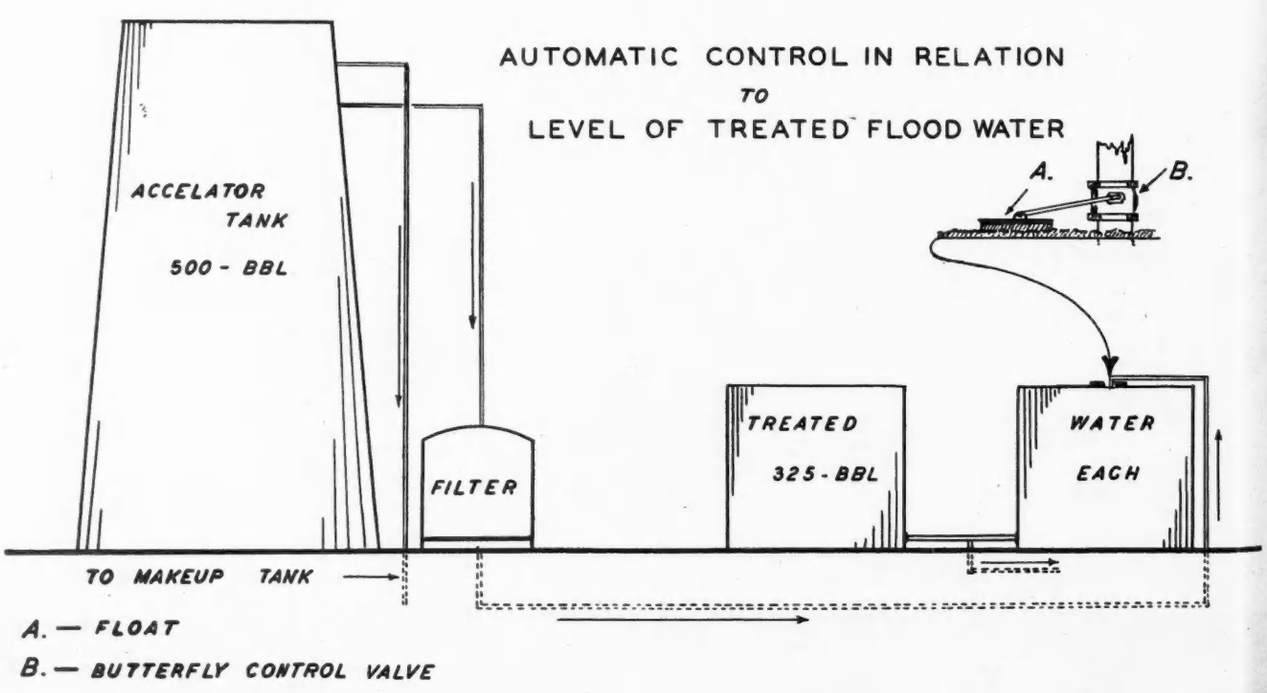
H. J. WALTER COMPANY, operating a waterflood project in the Nowata, Oklahoma, area, has recently equipped tanks containing treated water with a butterfly valve working against the pressure of the water column in the accelerator tank. Previous to this installation, it was necessary for the operator in charge to maintain the level of treated water by the manipulation of a gate on the input line. The irregularity of the water input into the wells through the pumps required constant attention in order to assure stability of the entire water system.

The input line into the clear water tanks is directly from the filter discharge. Water into the accelerator tank is from the aerator, the accelerator tank having two connections near the top, one of which leads into the filter which is of the enclosed type. The other line from the accelerator tank is a return to the makeup tank of raw water. From the tanks of treated water, each of approximately 325 barrels capacity, the water is pumped into the field lateral. The complete water system from the top of the aerator to the pump is a gravity hookup.

By the means installed the draw down due to pumping into the water lateral lowers the supply of treated water in the two 325-barrel tanks, dropping the float controlling the butterfly valve and allowing increased passage through the filter in proportion to the withdrawal. Conversely, when the pump is handling a minimum volume of water to the field, the float retards the filter to storage flow. As both treated water tanks are connected near the bottom by a nipple of pipe, only one control is necessary as it governs the water level in each tank at the same time. The input side of the pump is connected to the nipple joining the tanks. Except when back flowing to clean the filter unit, the operation is automatic.

Sheet metal was used to make the float. The device is approximately 14 inches in diameter, flat on top and bottom. A small yoke seats the actuating arm of the valve by means of a pin. The entire float is soldered.

The arrangement of the control in the manner described has been found satisfactory in practice. By controlling at the treated water tank, and discharging from the accelator overflow into the makeup basin, treated water is only passed once through the filter unit.



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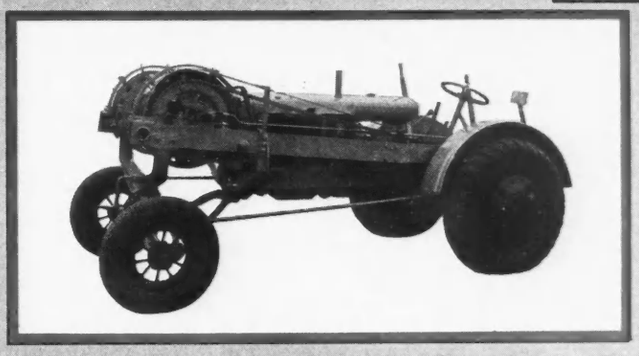

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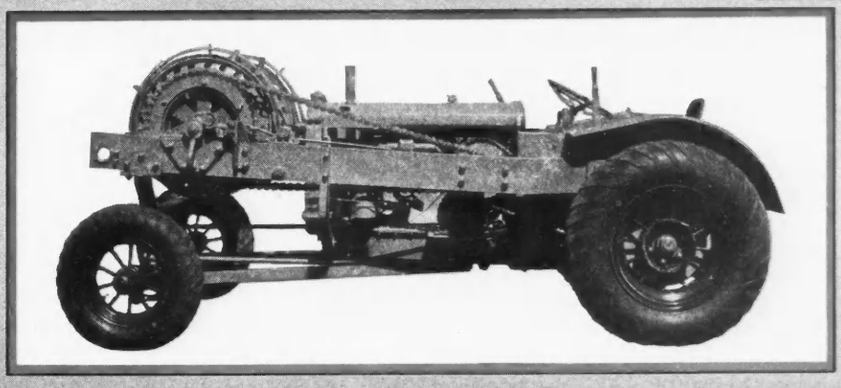
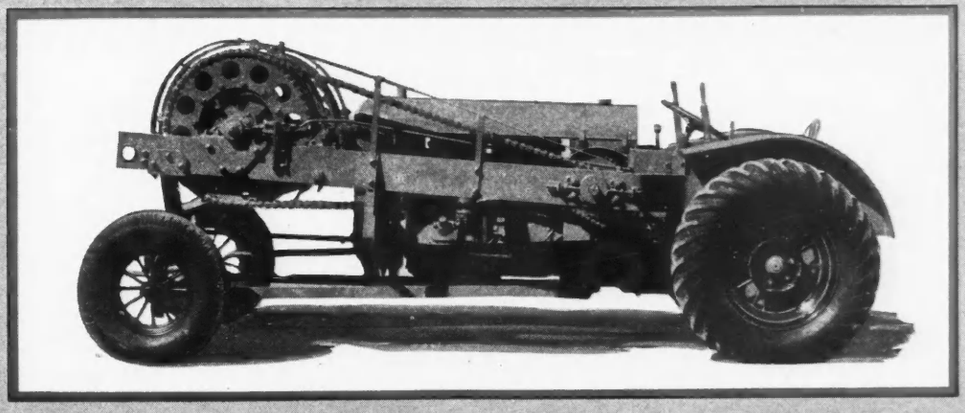


ALLIS-CHALMERS UE WINCH TRACTOR

Super powered heavy duty four cylinder engine, 5″ bore, 6½″ stroke. Maximum line pull 54,032 lbs. Eight line speeds 49′ to 1,133′ p.m. Drum capacity 9,800′ of ½″ line. Either 15 or 30 m.p.h. road speeds. Four forward road speeds and one reverse. Can be furnished with cleaning-out equipment, double drums, telescoping mast.



All Allis-Chalmers tractors have positive traction and extreme roadability, they are designed to carry approximately two-thirds of weight on rear or the drive wheels.

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The Mol Method

AND ITS APPLICATION TO ENGINEERING COMPUTATIONS

By EUGENE F. DAWSON
University of Oklahoma

THERE is a need in the work of engineers, petroleum, chemical, mechanical, natural gas, etc., for simple, direct, and short methods of calculations. Chemical and process engineers daily make use of these short methods that can easily be applied to many problems encountered by the mechanical, petroleum, and natural gas engineer.

The molal method of computation is especially applicable to problems of a chemical nature. Combustion, a chemical reaction, is the problem of many engineers. Combustion problems have long been solved on the "weight basis" which is a tedious method involving the use of tabulated gas densities. This method does not readily lend itself, as does the molal method, to analyzing the combustion performance of internal combustion engines and boiler plants, and problems involving properties of gases.

Handy for Many Calculations

The engineer may desire, in analyzing problems in his particular field, to determine relationships such as: flue gas-fuel ratio; air-fuel ratio; air-flue gas ratio; etc. Also when analyzing the flue gas from a boiler or the exhaust gases from an internal combustion engine, the operator of the gas analyzer may often ask the question: "Is this analysis representative for the fuel being used?", or "Is the sample of flue gas or exhaust gas which I have obtained and analyzed a representative sample, or, does stratification exist at the point where the sampling tube is located?" The knowledge of the use of the mol computation methods places the engineer in a position to quickly and easily answer many questions and solve problems that would be difficult by other methods of calculation.

To have at one's finger tips a simple method of determining *densities and specific volumes* for any gas under any conditions of pressure and temperature and to convert analyses from the weight basis to the volume basis and vice versa, is not only convenient but eliminates the trouble of hunting references and thumbing through handbooks.

The method that we shall call the "Molal Method of Computation" has many applications, a number of which will be discussed in this article.

Fundamentals of Mol Method

In the English system the "mol" is used to mean "pound mol". A mol of any substance (solid, liquid, or gas) is a quantity whose weight in pounds is expressed by the same number as the molecular weight. *Hence a mol is a weight.* A mol of carbon (C) is 12 pounds of carbon; oxygen (O_2) 32 pounds; nitrogen (N_2) 28 pounds; carbon monoxide (CO) 28 pounds; carbon dioxide (CO_2) 44 pounds; hydrogen (H_2) 2 pounds; water (H_2O) 18 pounds; methane (CH_4) 16 pounds; ethane (C_2H_6) 30 pounds; etc. In one mol of CO_2 there is one mol of carbon and one mol of oxygen while in one mol of CO there is one mol of carbon but only one-half mol of oxygen.

The numerical prefix in combustion equations indicates the molal or volume combining ratios. Note the following combustion formulas and their molal relationships.

(1)	$2\,H_2$	+	O_2	=	$2\,H_2O$
	2 mols		1 mol		2 mols
	(4 lb.)		(32 lb.)		(36 lb.)
(2)	C	+	O_2	=	CO_2
	1 mol		1 mol		1 mol
	(12 lb.)		(32 lb.)		(44 lb.)
(3)	$2\,C$	+	O_2	=	$2\,CO$
	2 mols		1 mol		2 mols
	(24 lb.)		(32 lb.)		(56 lb.)

If in the above, the word "mol" were changed to "volume" the equations would give the relation between the combining volumes as far as the *true gases* are concerned, (H_2, N_2, O_2, CO_2, and approximately for SO_2). Equation (1) would read: Two volumes of hydrogen and one volume of oxygen combine to form two volumes of water vapor.

If in 100 cubic feet of air there are 79 cubic feet of nitrogen and 21 cubic feet of oxygen, the volume percents are 79 and 21 respectively. Hence the air contains 79 percent N_2 and 21 percent O_2 on the basis of the number of molecules present, as equal volumes of gases under the same temperature and pressure contain the same number of molecules. (Avogadro's Law.) Therefore, a gas analysis in percent by volume may be used as the existing molal relation of the constituent gases in 100 mols of the composite gas.

Mol is a Weight

But remember that a *Mol is a weight* and not a volume. However, a mol of a *gas*, at a specific pressure and temperature, occupies a definite volume. This definite volume for a specific pressure and temperature is very important and useful.

Avogadro's Law states: "At any given temperature and pressure equal volumes of all gases contain the same number of molecules." Therefore the weights of equal volumes of gases at a specific temperature and

pressure, are directly proportional to their respective molecular weights.

The volume of one mol of a gas at different pressure and temperature conditions can be obtained from the following expression:

$$(4) \quad V_m = 1544 \frac{T}{P}$$

where V_m = volume in cubic feet of *one mol* (mol volume).
T = Temperature, degrees Fahrenheit absolute, $(t + 460)$
P = Pressure, pounds per sq. ft. absolute.

This formula is derived from the ideal gas equation $P V = W R T$.

where: P and T are as stated above
V = Volume, cubic feet
W = Weight, lb.
R = Gas constant : 1544/m
m = Molecular weight
1544 = Universal gas constant

$$\text{hence: } \frac{PV}{WT} = \frac{1544}{m}$$

for one pound of a gas. the equation becomes

$$\overline{V}m = 1544 \frac{T}{P}; \quad \overline{V} = \text{volume, cu. ft. per lb.}$$

"$\overline{V}m$" is the volume of one mol, therefore equals V_m.

The equation $V_m = 1544 \frac{T}{P}$ may be more usable with the pressure value in the unit of pounds per square inch absolute. This gives the form:

$$(5) \quad V_m = 10.72 \frac{T}{p}$$

Substituting in the above equation, the value of the *mol volume* for different standard conditions often used are:

	A	B	C
Pressure, lb./sq. in. abs.	14.7	14.7	14.65
Temperature, deg. F.	32	60	60
Mol volume (V_m), cu. ft.	359	179	381

Thus, at conditions of 14.7 pounds per square inch and 60° F., 379 cubic feet of O_2 will weigh 32 pounds; while the same volume of H_2 will weigh 2 pounds. *At a given temperature and pressure the volume of one mol (mol volume) is a constant for all gases.* In speaking of a "mol" reference is made to a definite weight of a substance in either the solid, liquid, or gaseous state. When using the term "mol volume" only the gaseous state of the substance, can be considered.

Applications of Molal Computations

Density, Specific Volume, and Gas Gravity

Density and specific volume are reciprocal values, and are defined respectively as weight per cubic foot and cubic feet per pound. Since the mol volume equals the product of the molecular weight and the volume of one pound, the following expressions are self derived.

$$\text{Density} = \text{weight per cubic foot} = \frac{\text{molecular weight}}{\text{mol volume}}$$

THE molal method answers the engineer's need for a simple, direct and short means for calculating many problems. It is particularly applicable to chemical problems, among which is the analyzing of combustion engine and boiler plant performance.

$$\text{Specific Volume} = \text{cu. ft. per lb.} = \frac{\text{mol volume}}{\text{molecular weight}}$$

Example 1: What is the density and specific volume of oxygen at 14.7 pounds per sq. in. absolute and 60 degrees F.?

$$\text{Density} = \frac{32}{379} = 0.0844 \text{ lb./cu. ft.}$$

$$\text{Specific Volume} = \frac{379}{32} = 11.84 \text{ cu. ft./lb.}$$

Densities and specific volumes under any conditions other than 14.7 pounds per square inch absolute and 60°F. may be obtained from the mol volume calculated from equation 5, or, if the value 379 is kept in mind, the mol volume under other conditions can be calculated from the basic gas laws.

$$\frac{P_1 V_1}{T_1} = \frac{P_2 V_2}{T_2}$$

where: P_1 = pressure, 14.7 lb. per sq. in. absolute.
V_1 = volume, 379 cu. ft.
T_1 = absolute temperature, deg. F., $(60 + 460)$.

Condition "2" refers to a different pressure and temperature condition for which the mol volume is to be determined.

Example 2: (a) What is the mol volume at a pressure of 14.65 lb. per sq. in. abs. and 32°F.?
(b) What is the density of oxygen under these conditions?

$$\text{(a) mol volume} = V_2 = \frac{14.7 \times 379 \times 492}{14.65 \times 520} = 360 \text{ cu. ft.}$$

$$\text{(b) Density} = \frac{32}{360} = 0.0889 \text{ lb./cu. ft.}$$

If a gas mixture can be considered as having a molecular weight, then air has a molecular weight of approximately 29. The weight of a gas as compared to air is termed its specific gravity or more simply its "Gravity." If the molecular weight of a gas is known, its gravity is easily obtained by dividing its molecular weight by 29.

Example 3: The gravity of methane gas is 16/29 or 0.552.

Volume and Weight Analyses

An analysis of a gas given by volume percentages may be converted to the weight basis by use of the densities of the constituent gases at a specific temperature

and pressure. This method is rather inconvenient due to the difficulty of remembering the density values. As molecular weights are proportional to densities, the molal method greatly simplifies this conversion.

Example 4: Convert the following volume analysis to the weight basis:

Gas Constituents	Percent by Volume (or Mols/100 mols of gas)	Pounds per Mol (Molecular Weight)	Pounds	Percent by Weight
CO_2	12.60	44	554.4	18.35
O_2	5.40	32	172.8	5.72
CO	0.50	28	14.0	0.46
N_2	81.50	28	2282.0	75.47
	100.00		3023.2	100.0

Example 5: What is the volume analysis of a gas mixture that has an analysis by weight of 77 percent nitrogen and 23 percent oxygen?

Gas	Percent by Weight (or pounds)	Pounds per mol (Molecular Weight)	Mols	Percent by Volume (or mols/100 mols of gas)
O_2	23.00	32	0.718	20.7
N_2	77.00	28	2.750	79.3
	100.00		3.468	100.0

Carbon-Hydrogen Balance for Flue Gas-Fuel Comparison

After a flue gas sample is analyzed, the engineer is desirous of knowing how much faith he can place in the results obtained. He wishes to satisfy himself as to whether or not the sample is representative for the fuel used. If there is any gas stratification at the location of the sampling tube or any leaks exist in the connecting line or analyzer the flue gas analysis may be greatly in error. The molal method of computation serves as a convenient means of checking the sample analyzed.

The ratio of the carbon to the hydrogen in the flue gas should be approximately the same as the carbon-hydrogen ratio of the fuel used to produce this flue gas. The explanation given with the following example will illustrate the procedure for making this comparison.

Example 6:
Volume Analysis, Percent, or, Mols Per 100 Mols of Gas

Fuel		Dry Flue Gas	
CH_4	85.6	CO_2	9.6
C_2H_6	11.8	O_2	3.7
CO	1.2	CO	0.5
CO_2	0.5	N_2	86.2
O_2	0.2		100.0
N_2	0.7		
	100.0		

The nitrogen and oxygen contents of the fuel are so small that it may be considered that all the nitrogen and oxygen in the flue gas came from the air supplied for combustion.

When the nitrogen and oxygen contents of the fuel are an appreciable amount of the fuel, as in blast furnace gas, they should be taken into account in this carbon-hydrogen ratio comparison. This special case is dealt with later on in the article.

The volume percentages of oxygen and nitrogen in air are approximately 21 and 79 percents respectively. These values are not quite exact, but close enough for most combustion calculations.

Referring to the above analyses: The oxygen that was in the air supplied for combustion can be calculated from the nitrogen content of the flue gas. In 100 mols of dry flue gas there are 86.2 mols of nitrogen. The oxygen supplied with this nitrogen was $\frac{21}{79} \times 86.2$ or 22.90 mols. The mols of oxygen in the dry flue gas, both free and combined, in the form of CO_2, O_2 and CO, are 13.55 mols. $(9.6 + 3.7 + \frac{0.5}{2})$. The oxygen that was supplied the furnace that is not present in the dry flue gas is in the wet flue gas in the form of water vapor. This amount is 22.90 — 13.55 or 9.35 mols. The hydrogen in the fuel combined with some of the oxygen in the air supplied to form this water vapor. Therefore the amount of hydrogen in the wet stack gases is 2 x 9.35 or 18.70 mols of hydrogen. The combustion equation for hydrogen states that two mols of hydrogen unite with one mol of oxygen to form water vapor.

There are 10.1 mols of carbon in the flue gas per 100 mols of flue gas $(9.6 + 0.5)$. The carbon-hydrogen ratio of flue gas is then $\frac{10.1}{18.70}$ or 0.540. (If the N_2 and O_2 in the fuel were taken into account this C-H ratio would be 0.534. The difference is, of course, negligible.)

The carbon-hydrogen ratio of the fuel is:

$$\frac{C}{H_2} = \frac{85.6 + 2 \times 11.8 + 1.2 + 0.5}{2 \times 85.6 + 3 \times 11.8} = 0.537$$

The two ratios, 0.540 and 0.537 are quite close and indicate that the sample analyzed is a representative sample, that no stratification exists at the sampling tube location and that there are no leaks in the analyzer and connecting lines.

Exact Analysis Not Always Available

The exact analysis of a fuel is not always available. The engineer making the analysis of the flue gas or exhaust gas knows approximately the constituents of the fuel being used. For example, natural gas from a specific field may be chiefly methane (CH_4). The carbon-hydrogen ratio for methane is ½ or 0.50, as there is one mol of carbon and two mols of hydrogen per mol of methane. Hence the analysis of flue gas or exhaust gas from using this fuel should give a carbon-hydrogen ratio in the neighborhood of 0.5. If gasoline of such a nature to have the symbol C_8H_{18} were used as the fuel, the carbon-hydrogen ratio would be 8/9 or 0.89.

If a fuel were used whose ultimate analysis is given on the *weight* basis, the carbon-hydrogen ratio can be obtained as per the following example:

Example 7: Given the following items of the ultimate analysis of a bituminous coal; H_2 5.4 percent; C 76.0 percent; O_2 10.0 percent. The hydrogen to be used in this comparison is the free hydrogen or the total hydrogen minus the hydrogen combined with the oxygen in the fuel in the form of moisture. The free hydrogen equals

$$H_2 - \frac{O_2}{8} \text{ or } 5.4 - \frac{10.0}{8} = 4.15.$$

The percents given in the analysis may be considered as pounds per 100 pounds of the coal, or C 76.0 pounds; H_2 4.15 pounds. In terms of mols these values would be: $\frac{76.0}{12}$ or 6.33 mols of carbon; $\frac{4.15}{2} = 2.08$ mols of hydrogen. The carbon-hydrogen ratio of this fuel is then $\frac{6.33}{2.08} = 3.04$.

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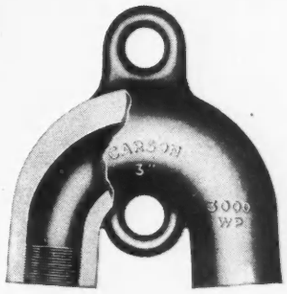

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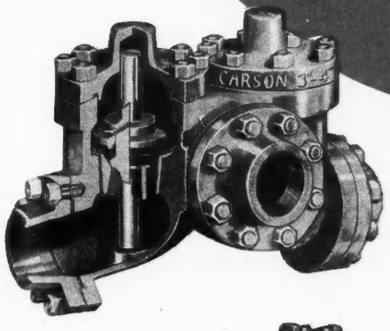

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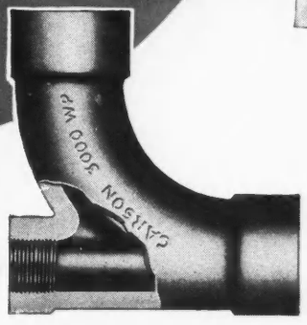

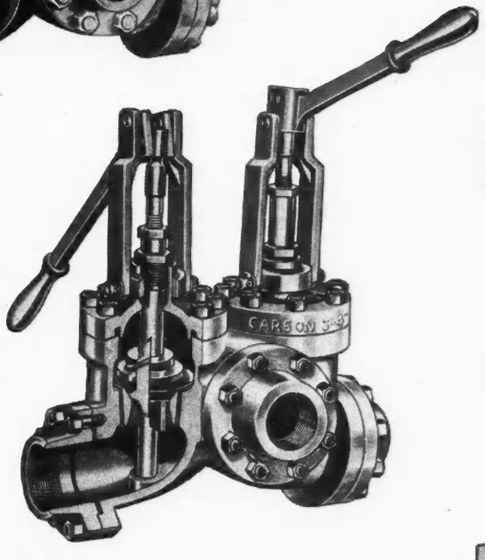

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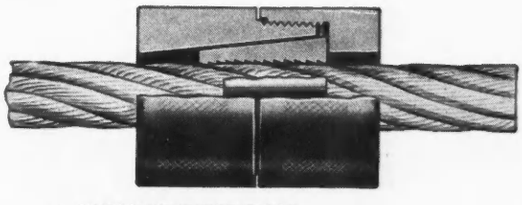

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Flue Gas-Fuel Ratio

The flue gas—fuel ratio is a necessary item in determining the dry stack gas loss in a boiler heat balance calculation. The ratio in itself is an interesting combustion performance item. This ratio of the mols of dry flue gas per mol of fuel used can be determined by what is known as the "Carbon Balance" as the carbon in flue gas comes from the carbon in the fuel.

Example 8:

Volume Analysis, Percent; or Mols per 100 Mols of Gas

Fuel Natural Gas		Flue Gas	
CH_4	81.4	CO_2	8.2
C_2H_6	17.4	O_2	6.4
O_2	0.1	CO	0.2
CO_2	0.4	N_2	85.2
N_2	0.7		
	100.0		100.0

The mols of dry flue gas formed from the combustion of one mol of fuel

$$= \frac{\text{mols of carbon in one mol of fuel}}{\text{Mols of carbon in one mol of flue gas}}$$

$$= \frac{81.4 + 2 \times 17.4 + 0.4}{8.2 \quad + \quad 0.2} = 13.9$$

If it is desired to determine the dry stack gas loss of a boiler per mol of fuel fired, the equation is as follows:

$$H = M\ C_p\ (t_c - t_a)$$

where H = heat of the dry stack gasses in Btu per mol of fuel fired
M = mols of dry stack gases per mol of fuel fired
C_p = molal specific heat, (For approximate work this value may be taken as 7.12)
t_c = temperature of flue gas, deg. F.
t_a = temperature of air entering furnace, deg. F.

Flue Gas-Air Ratio

The determination of the mols of flue gas formed per mol of air supplied the fuel is determined by what is known as the "Nitrogen Balance." For a fuel low in nitrogen content it may be stated: the nitrogen in the flue gas comes from the nitrogen in the air supplied for combustion. Air contains approximately 79 percent nitrogen by volume. Hence the flue gas-air ratio is determined by dividing 79 by the volume percentage of the nitrogen in the flue gas.

Example 9: Given the fuel and flue gas analyses as in the preceeding example.

$$\text{Flue Gas-Air Ratio} = \frac{N_2 \text{ in one mol of air}}{N_2 \text{ in one mol of flue gas}} = \frac{79}{85.2} = 0.927$$

Air-Fuel Ratio

The mols of air supplied per mol of fuel burned is calculated by dividing the Flue Gas-Fuel Ratio by the Flue Gas-Air Ratio.

From the above examples

$$\text{Air-Fuel Ratio} = \frac{13.9}{0.927} = 15.0$$

This ratio is an important performance item in all combustion work, especially in the field of internal combustion engines.

Similar Calculations for a Fuel High in Nitrogen Content

Example 10 Determine from the following test data of the combustion of blast furnace gas (a) flue gas-fuel ratio, (b) flue gas-air ratio, (c) air-fuel ratio, and (d) the carbon-hydrogen ratio comparison between the fuel and the flue gas.

Volume Analyses, Percent; or Mols per 100 Mols Gas

Blast Furnace Gas		Flue Gas	
CO_2	12.5	CO_2	21.0
CO	25.5	CO	0
H_2	3.5	O_2	3.4
N_2	58.5	N_2	75.6
	100.0		100.0

(a) Flue Gas-Fuel Ratio (carbon balance) $= \frac{12.5 + 25.5}{21.0} = 1.81$ mols flue gas per mol of fuel

(b) The nitrogen in the fuel will appear in the flue gas in an amount equal to $58.5 \div 1.81 = 32.3$ mols. Hence the nitrogen in the flue gas that came from the air equals $75.6 - 32.3 = 43.3$ mols.

$$\text{Flue Gas-Air Ratio (nitrogen balance)} = \frac{79}{43.3} = 1.83$$

(c) Air-Fuel Ratio $= \frac{1.81}{1.83} = 0.99$ mols of air supplied per mol of fuel burned. Or, approximately one unit volume of air was used for one unit volume of fuel burned.

(d) The carbon-hydrogen ratio comparison between the fuel and the flue gas can be made on a fuel containing considerable nitrogen and oxygen. The procedure is similar to the previously explained method, with the exception that the flue gas analysis must be corrected for the amount of nitrogen and oxygen that came from the fuel. This can be done after having determined the flue gas-fuel ratio from the carbon balance.

Flue Gas:

Flue Gas-Fuel ratio from above $= 1.81$

N_2 in flue gas from fuel $= \frac{58.5}{1.81} = 32.3$ mols per mol of flue gas

N_2 in flue gas from air supplied for combustion $= 75.6 - 32.3 = 43.3$ mols per mol of flue gas

C in dry flue gas $= 21.0 + 3.4 = 24.4$ mols per mol of flue gas

O_2 in dry flue gas from fuel $= \frac{12.5 + 25.5/2}{1.81} = 13.9$ mols/mol of flue gas.

O_2 in dry flue gas from air $= 24.4 - 13.9 = 10.5$

Total O_2 supplied with N_2 from air $= 43.3 \times \frac{21}{79} =$

O_2 combined with H_2 in form of water vapor in the flue gas $= 11.5 - 10.5 = 1.0$ mols per mol of flue gas.

H_2 combined with 1.0 mols of $O_2 = 2.0$ mols

Carbon in one mol of flue gas $= 21.0$

$$\text{Carbon-Hydrogen Ratio} = \frac{21.0}{2.0} = 10.5$$

$$\text{Fuel: Carbon-Hydrogen Ratio} = \frac{12.5 + 25.5}{3.5} = 10.85$$

The ratios, 10.5 and 10.85 are quite close and indicate that the flue gas sample is a representative sample. Combustion calculations and performance ratios for solid and liquid fuels are probably preferred on the weight basis due to custom, and the fact that the fuel analysis is given on the weight basis. As the flue gas analysis is always obtained in percents by volume these items appear in the formulas generally used as volume percents. These formulas are readily derived once one is familiar with the mol method and its application The uses of this calculation method are many. Once the engineer has familiarized himself with its underlying fundamentals it will serve many useful means.

The February 10. 1936, issue of THE OIL WEEKLY, under the article heading "The Testing of Oil-Field Boilers," carried through a specific example of the molal computation method as applied to boiler heat balance determination.

Percentages of Recovery

By V. G. GABRIEL,
Consulting Geophysicist and Geologist,
Houston, Texas

THE question of the percentage of recovery of oil from underground is among the controversial questions in oil evaluation. Some claim that the average recovery of oil does not exceed 20 percent of the total capacity stored underground, whereas some technicians believe that 60 percent recovery can be obtained under favorable conditions. Deussen[1], in his interesting paper on the acre-foot yields of Texas Gulf Coast oil fields states: "Most authorities will agree, I believe, that it does not in general exceed 40 percent."

This wide variation in the determination of the percentage of the recovery of oil from the oil pools is due to the presence of many variable factors which greatly influence the final determination. At first glance, the evaluation of the percentage of recovery is simple, especially in dealing with nearly exhausted oil reservoirs, because in this nearly ideal case, the total amount of oil produced, divided by the total amount of original reserves considered to be stored underground, gives the percentage of recovery of oil from underground.

Algebraically it can be expressed as,

$$\frac{\text{total pr.}}{7758 \times P \times S \times T \times A} = \%\ \text{of recovery}$$

where

total pr.=total production in bbls.
P=porosity %
S=saturation %
T=thickness in feet
A=number of productive acres
7758=a constant

[1] Alexander Deussen: Acre Foot Yields of Texas Gulf Coast Oil Fields. Petroleum Develop. & Technology, A.I.M.E., 1936.

[2] S. A. Judson, H. D. Easton & W. A. Schaeffer: "Estimation of Petroleum Reserves in Prorated Fields, Petroleum Division, 1935, A.I.M.E."

[3] Alexander Deussen, op. cit.

[4] J. Trenchard and J. B. Whisenant: "Government Wells Oil Field, V. 19, No. 8, B.A.A.P.G., 1935

However, even in this ideal case, the determination of the average porosity and thickness might and usually does give some difficulty. In the majority of cases, the problem of the determination of the percentage of recovery of oil from its oil reservoir is rather complex, because, in the first place, there is usually more oil still left in the oil pool available for extraction; also the variety of methods in spacing, drilling, and extraction from underground applied to the same oil reservoir during its lifetime contributes certain unreliability to evaluations pertaining to future additional percentage of recovery.

Use of Table Data

Table I reflects the variations in the acre-foot content of oil as a function of porosity and saturation; this table also gives the percentage of recovery of oil in barrels. The table data are computed for saturations ranging from 50 to 100 percent and for porosities from 10 to 40 percent. However, Judson[2] Easton and Schaeffer state that "the possible error in assuming this zone (oil with no or little water and free gas) to be 100 percent effective saturation should be compensated by the fact that there will be some oil recovered from the zone of water and oil intermingled."

Also Deussen[3], Trenchard and Whisenant[4] and many others accept 40 percent as percentage of recovery of oil under normal existing conditions. Hence we see from Table 1 that under normal conditions for saturation equal 100 percent and for percentage of recovery equal 40 percent, the acre foot yields will range from 311 barrels for 10 percent porosity to 1088 barrels for 35 percent porosity.

TABLE 1
Acre-Foot Oil Yields in Barrels

Recovery, Percent	100 Percent Saturation						90 Percent Saturation						80 Percent Saturation						70 Percent Saturation						50 Percent Saturation					
	Percent Porosity						Percent Porosity						Percent Porosity						Percent Porosity						Percent Porosity					
	10	20	25	30	35	40	10	20	25	30	35	40	10	20	25	30	35	40	10	20	25	30	35	40	10	20	25	30	35	40
	Yields in Barrels per Acre-Foot																													
100.....	776	1552	1942	2327	2720	3103	698	1396	1746	2095	2444	2703	621	1241	1552	1862	2172	2483	543	1086	1358	1629	1901	2172	388	776	970	1164	1358	1552
60.....	467	932	1165	1390	1632	1860	420	837	1050	1260	1470	1625	373	745	930	1025	1303	1490	326	650	813	977	1140	1300	234	466	583	695	816	930
55.....	427	855	1069	1271	1497	1710	384	767	960	1150	1340	1490	342	683	855	1120	1195	1365	298	597	745	895	1045	1192	214	428	535	636	749	855
50.....	388	776	970	1158	1360	1550	349	697	872	1050	1220	1355	310	620	775	930	1085	1240	272	543	677	815	950	1085	199	384	485	579	680	775
45.....	350	700	875	1045	1225	1400	314	628	785	945	1100	1220	279	560	698	840	977	1117	244	488	610	733	855	965	175	350	438	523	613	700
40.....	311	621	777	930	1088	1240	279	557	697	840	977	1085	248	497	620	745	870	995	218	435	542	652	760	857	156	311	389	465	544	620
35.....	272	544	680	813	952	1086	244	488	610	735	855	945	217	435	543	652	760	870	190	380	475	570	665	750	136	272	340	407	476	546
30.....	233	467	583	698	816	932	210	418	523	630	735	810	186	373	465	558	652	745	163	326	406	490	570	643	117	234	292	349	408	466
25.....	194	388	485	581	680	777	175	349	436	525	612	675	155	311	388	466	543	620	136	272	339	407	475	536	97	194	243	291	340	389
20.....	155	311	389	465	544	622	140	279	349	420	489	540	124	248	310	373	435	497	109	217	271	326	380	430	78	156	194	233	272	311

REMARKS: Slide rule accuracy. Use interpolation if necessary, to suit your data. A bed one foot thick and one acre in area contains 7758 barrels of sand or oil. Absolute porosity for spherical grains of uniform size is 25.97 percent.

CORE ANALYSIS VALUABLE IN

Water Flooding Work

By LEON KRAUSE and G. N. POWELL, JR.,
Geologic Standards Company,
Tulsa, Oklahoma

CORING analyses of shallow oil sands of the gas-expansion type occupy a position in the oil industry equivalent to that of core drill "blocks" and assay tests in ore development. In the latter an ore deposit may be cored to determine the extent and thickness, and the length of the "pay" and the assays prove the quality of the deposit. In coring for water-flood development, the oil sand may similarly be cored to outline the total area that can be profitably worked. This area times the thickness of the oil sand that can be flooded represents the reserve available for development. The thickness that can be successfully or profitably worked by flooding can be found from laboratory tests. A certain amount of this reserve may be recovered by a given type of development, such as a 5 or 7-spot pattern, with 330 or 440-foot spacing. From the core analysis data and with a given development program in mind it is possible to arrive at yields and profits in advance of expenditures for the actual drilling and operation.

Many Factors Involved

During the past year many of the shallow fields of northeastern Oklahoma and southeastern Kansas have been intensively studied, and hundreds of cores have been taken to determine the economic possibilities for water flooding. It is well known, of course, that 5-spot water flooding already has obtained a good start and has yielded promising results based on actual pipe line runs, but all the details that had to be met and the various factors involved in sand conditions have not been described. If the logs of old wells in any of these fields are studied, it is found that they reflect a sand thickness of from 10 to 50 or more feet, depending on the particular pool and lease. Data from the logs of present oil wells and on any abandoned wells, however, are only a starting point. In some cases the sand thickness shown by the log is the same as the workable sand footage that would be outlined by a core test hole and analyses. However, actually in only a few cases out of some hundreds of cores and analyses has this been found to be true. In the original drilling, sand sections separated by occasional shale layers were either logged as broken sand with no oil, or left out. Quite often it has been found by core tests that these sections represent an appreciable oil reserve for water flood development. In other cases the core tests show that in the original oil wells the sand was not completely penetrated. In the early drilling, many of the old wells were intentionally stopped high in the sand because of the fear of encountering bottom water or, since good results were obtained by penetrating only so far, the full thickness was not drilled. In the recent coring of some areas it has been found that there was considerably more sand and a greater reserve present than indicated by the original logs for such reasons.

It is clear that in core tests and analysis work the primary consideration is to determine the amount of sand footage and the total sand content. Obviously there is no purpose in proceeding further if there is insufficient oil in place to assure a profitable venture.

The amount of oil sand footage is, of course, determined from the core itself. The coring operation may be done either with a rotary core drill machine or with a cable tool core barrel. Rotary core drill work is at the present time being done both by contract and with company owned machines. In the case of cable tool cores the operator usually owns his own cable tool barrel and pays for its operation on day work basis. There is, in many cases, a fair economical balance between the two coring methods. More machinery, more labor and more expense are connected with the rotary core drill operations, and naturally the cost per foot is higher. However, a more complete recovery and better samples are obtained. Specifically, rotary core drill machine contracts cost between $2.75 and $4.50 per foot of coring, and recoveries will generally average from 90 percent upwards. These figures are for 2-inch diameter cores and are slightly higher for 3-inch cores. In this connection there is some difference of opinion as to whether 2-inch or 3-inch cores are the most desirable. For exploratory core tests where considerable acreage is involved, it is believed that the advantage is clearly with the 3-inch because there is actually more core, by volume, taken, and larger and better test samples may be obtained from it. In routine coring where development is already under way the advantages swing to the 2-inch core.

Cable Tool Coring

In several localities in the above region cable tool coring for core analyses purposes has proved quite successful. In one instance a cable tool core obtained 65 percent recovery out of 180 feet of section cored. The samples secured were quite satisfactory for testing purposes and the cost was relatively inexpensive. From 30 to 40 feet were cored per eight-hour day. Since the day work in this case was only $25 per eight hours, and since only about eight core bit dressings were required, the net cost of the work was only a little more than by straight drilling.

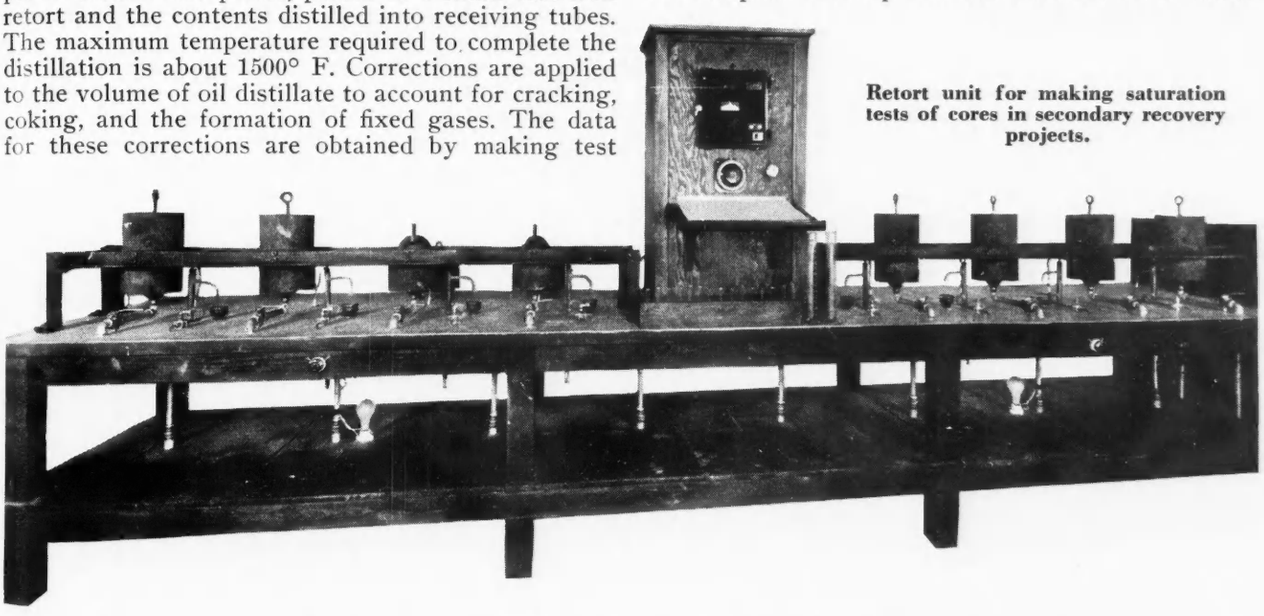
The test for oil content really begins as soon as

the core is obtained at the well. The 6 to 10-foot core run is laid out in a core box and saturation samples selected at intervals of about two feet. A sample should be at least four inches long and must be immediately wrapped in cellophane or tinfoil, tightly taped, and sealed in glass jars or cans, to prevent evaporation of the contents before the laboratory tests are made.

Test Sand Saturation

The tests of the saturation samples as made in the laboratory are calculated in units of barrels of oil in place per acre foot of sand. These tests may be made by either the retort, gravimetric—or volumetric—extraction methods. The retort method is most commonly used. In this method the saturation sample is broken into pieces, placed in a small cast iron retort and the contents distilled into receiving tubes. The maximum temperature required to complete the distillation is about 1500° F. Corrections are applied to the volume of oil distillate to account for cracking, coking, and the formation of fixed gases. The data for these corrections are obtained by making test runs with the retorts, using the same kind of oil sand, and heating conditions as in the regular sample runs. The gravimetric-extraction method consists of weighing a given amount of the saturation sample, extracting the contents of the core with a solvent, and re-weighing the dried, extracted sample. The loss in weight represents the weight of the oil and water in the sample. During the extraction any water present in the sample is trapped separately and measured. The weight of such water is subtracted from the total loss in weight to obtain the weight of the oil. From the weight of the oil and the volume of the sample, the data are converted to the usual units of barrels per acre foot. In the volumetric-extraction method the oil removed from the sample is extracted by a solvent. It is necessary to obtain the oil content value by separating the oil from the solvent. This is done by distillation, and since pentane usually is used as the solvent, the distillation may be made by heating the mixture in a hot water bath. This method also requires a correction factor, since, if the distillation is incomplete, some of the sample will be left with the oil, and the figure will be too high. If the distillation is extended too far, some of the lighter constituents in the oil will be removed along with the solvent. Data for this correction are obtained by running many distillation tests of the mixture where the volumes of the components are known.

After the oil content tests are made, the values secured for each test sample must be allocated to a certain section of the oil sand in the core. If the samples were taken at intervals of exactly two feet and there are no shale breaks or dry sections in the sand, it is a simple matter to multiply each oil content value by two feet of sand, total their products and obtain the total oil content per acre. However, such idealized conditions are very seldom found. In the first place, thin shale fingers, core losses, and in some cases sections of sand that are clearly dry of oil are often present. This prevents the obtainment of good samples at uniform intervals. Also, for any given sample interval, whether regular or irregular, the bottom of one saturation block and the top of the next lower saturation block usually will not occur at exactly the mid-point of the distance between the samples. The top and the bottom of the saturation block represented by the sample should be determined by very careful inspection of the core. In other words, where two saturation samples were taken in four feet of sand, the top sample may represent either one, two or three feet of sand, and the other sample the remainder of the footage. Usually the laboratory worker has had so much experience in running many oil content tests under different intervals of spacing that he develops an innate sense for selecting the proper footage for the sample. This "logging" of the core, as a laboratory tester calls it, is very important, and the final results may vary, for a given series of oil content values and a given sand footage, as much as 10 to 15 percent plus or minus, depending on the selections made.



Retort unit for making saturation tests of cores in secondary recovery projects.

Take Permeability Tests

Permeability tests are made throughout the core, and these tests should be made in accordance with the procedure as approved by the Petroleum Technology Committee of the American Petroleum Institute. In core analysis work, permeability data are presented in units of millidarcys. The permeability test is made by drilling cylindrical samples one inch in diameter from the core, parallel to the bedding plane. The ends are fractured and the oil and water contents are removed from the test specimen by extraction. The sample is dried and measured. The test itself is made by placing the sample in test ap-

paratus and flowing a fluid through it under definite conditions. If the cross sectional area and length of the sample, the pressure drop, the viscosity and rate of flow of fluid through the sample are known, the permeability may be calculated. The basic unit is the darcy which represents a flow of one cubic centimer per second through a sample having a cross sectional area of one square centimeter and a length of one centimeter, with fluid being under a pressure drop of one atmosphere and having a viscosity of one centipoise. For many sands, however, the darcy unit is quite small. For convenience, since whole numbers are desirable, the milidarcy value, 1/1000 of a darcy, is used.

The Bartlesville sand has been cored more than any other for the purpose of investigating water-flood possibilities, and this sand usually will show permeability values ranging from an average of 15 to an average of 80 or more millidarcys. Usually a Bartlesville sand core will have an average permeability of around 15 millidarcys and will have a considerable number of shale fingers or laminations present. These laminations may be very useful in confining the flow of the driving water to horizontal planes and preventing cross or vertical movement. The shallow layers are usually impermeable for all practical purposes. Regardless of whether the average permeability is 15 or 80, almost every core will show considerable variance from foot to foot or from place to place through its length. These variations are of much importance in interpreting the test results and in the future flooding of the sand. Usually operators regard any sand in a section where the variation is not greater than one to ten as floodable. In other cases the allowable variation may be raised to as high as fifteen or twenty to one. In other words, the operator may decide on flooding sands in all sections of the core where the permeability is not lower than five or greater than fifty, or five to seventy-five, or five to one hundred millidarcys. Usually the lower limit of permeability for an oil sand is set at one or two millidarcys. If any sand has a permeability less than this minimum figure the sand is regarded as being so impermeable that comparatively little water will enter it to drive out the contained oil. Likewise, usually a maximum figure also is set. If a certain section of sand has a permeability greater than that included in the allowable variation, such sand must be cased or shut off before any of the reserve may be worked. In cases where the variation for permeability values is very high, the operator will plan to use the delayed "drilling" or "producing" method in the development. This tends, to a certain extent, to cancel the influence in permeability by banking the oil into complete saturation in each of the various of high specific permeability and into a central area around the oil well location. Thereafter the banked oil does not have such a long distance to travel through the relatively impermeable sections.

Porosity Tests Show Capacity

Porosity tests are made throughout the core to determine the storage capacity of the sand, particularly from the standpoint of allowing calculations to be made on the amount of water that will be required to fill the pore spaces. The tests also permit the calculation of the oil content in terms of percent oil saturation. The oil content values, in terms of barrels per acre foot, may be exactly the same for two different sand sections but the present oil saturation of each may be quite different. Since the percent oil saturation is, by definition, the ratio of the oil content volume to the total pore space volume or, simply the percent of the pore space that is filled with oil, it is clear that there is an inverse relationship between porosity and oil saturation. For example, two sand sections may each have an oil content of 300 barrels per acre foot with one section of ten percent porosity and the other of twenty percent. Then:

$$\frac{300}{77.6 \times 10.0} \times 100 = 38.6\% \text{ oil saturation}$$

$$\frac{300}{77.6 \times 20.0} \times 100 = 19.3\% \text{ oil saturation.}$$

The importance of the percent oil saturation value is from the indication they give of the state of occupancy of the oil in the pore spaces or capillary network of the sand. For example, if a sand has a 40 percent oil saturation value, a considerable part of the oil must exist in a central position in any given pore space. Since the action of a water drive is regarded as essentially that of hydraulic displacement, with water acting as an advancing piston, the oil in the center part of the pore spaces or capillaries will be directly displaced by water. On the other hand, if the percent oil saturation is only five percent most of the oil will exist as an absorbed film on the sand grains, with some portion occupying only the smallest capillaries. If a water drive could advance through such a sand it would move practically none of the oil. In other words, where conditions of low percent oil saturation exist, the sand already has a sufficient number of "holes" in it to allow water to move through without pushing the oil that is on the sides of the pore spaces. For these reasons a flat recovery factor, as a percent of the total oil content in place, cannot be used for all oil content and percent oil saturation values. The recovery factor will vary in some rather direct relationship with percent oil saturation. Also, since many factors other than the above are of influence in establishing a percent recovery factor, it is difficult to describe any given relationship between percent oil saturation and percent oil recovery for all sands or conditions. Usually the maximum value for a recovery factor is believed to be about 50 percent.

After the oil content, permeability, porosity and percent saturation values are studied for the complete section and an estimate made of the recoverable oil per acre, it is possible to begin to compute the possible profits of the development. At present for sands of 400 to 600 feet in depth, and with an adequate water supply, 440-foot, five spot, water flood developments are estimated to cost between $1,200 and $2,000 per acre. This includes water input in oil wells, casing, tubing, surveys, mechanical equipment, water plant and operation. Usually if properties are not owned but must be purchased for development, their cost is not the major cost of the project. However, since it is clear the net profits from an operation will depend directly upon the reserve available for recovery by water flooding, it is economically imperative to develop only the best type of properties.

What's New in the Catalog?

To determine what part of the new 1937 Composite Catalog was devoted to new equipment shown for the first time, or improved since the previous issue, the publishers addressed letters to the manufacturers who filed their equipment catalogs in the new 1937 Composite Catalog.

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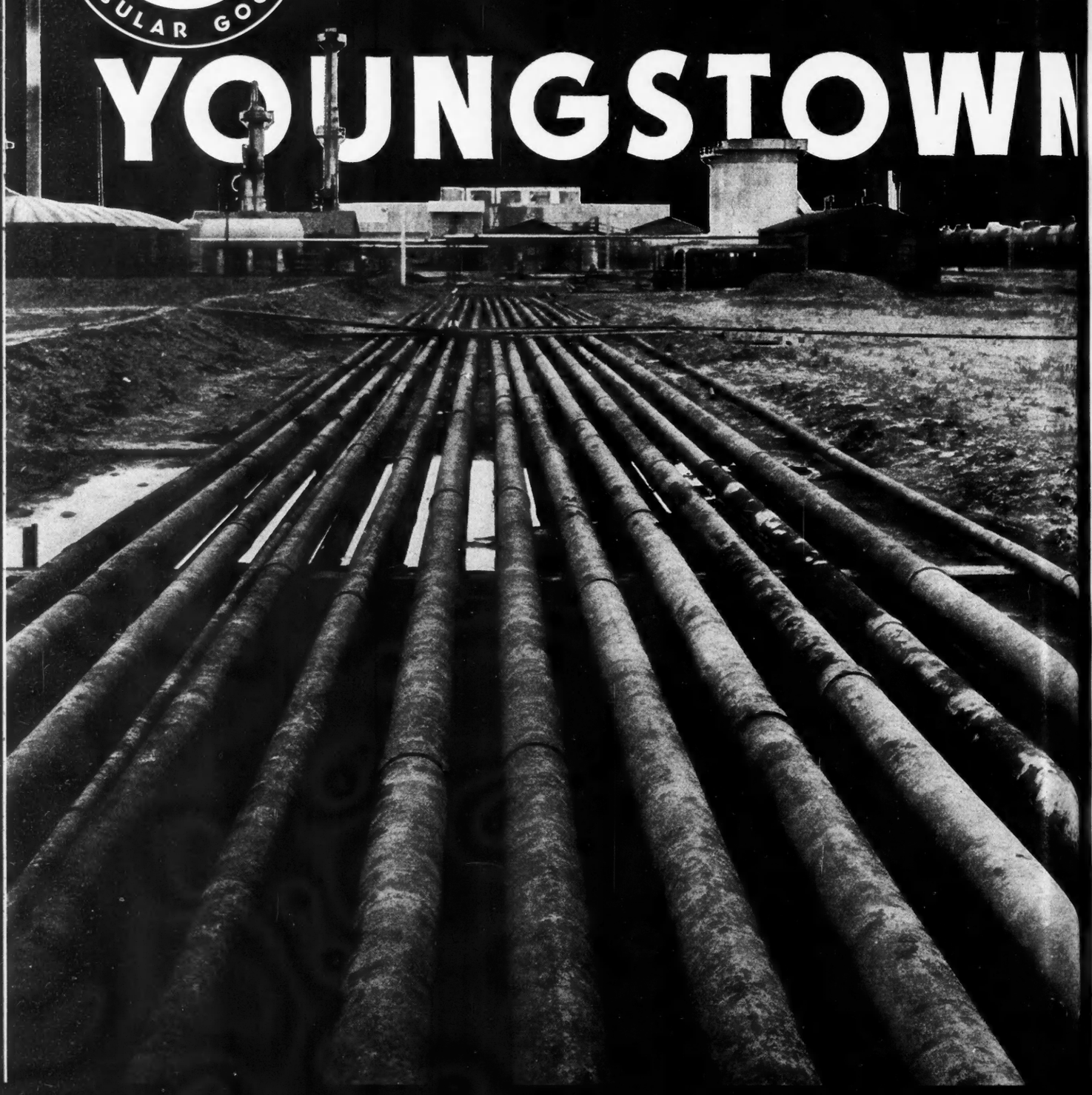


Crude Price Raise

POSTINGS IN MID-CONTINENT ADVANCED 10 TO 15 CENTS

[*Continued from page 10*]

kansas and Louisiana fields. Rodessa oils were raised 15 cents on all grades, the new prices ranging from 93 cents for below 25 gravity and 95 cents for 25-25.9 gravity upward by 2 cents differential to a top price of $1.25 for 40 gravity and above.

Smackover, Arkansas, crude was raised 15 cents, also, to a new flat price of 90 cents a barrel.

For the regular North Louisiana-Arkansas fields, including Caddo, Homer, Haynesville, El Dorado, and others, Standard of Louisiana provided uniform 12-cent increases on all grades, the new postings being in all instances 3 cents under the Rodessa postings, and thus ranging from 90 to $1.22 a barrel.

Mid-West Postings Raised

The price increases instituted January 28 by The Ohio Oil Company for the Middle Western states varied from 10 to 12 cents a barrel. The new prices included $1.25 for Lima crude, up 10 cents; $1.35 for Illinois and Princeton crudes, an increase of 12 cents; and $1.40 for Owensboro-Western Kentucky, similarly up 12 cents.

North Texas Advances

Although Humble Oil & Refining Company raised West Central Texas prices only 10 cents, some other purchasers gave that district a 12-cent increase, along with North Texas. Magnolia Petroleum Company was among those applying a 12-cent increase generally in North and North Central Texas, and Sanolind and Sinclair-Prairie were others. The two latter also were among those meeting Carter's 12-cent increase for Oklahoma and Kansas. The North Texas schedule of Magnolia, covering Burkburnett, Archer, Henrietta, Electra, Comanche and Olden districts, starts with a price of 96 cents for below 29 gravity, posts 98 cents for 29-29.9 gravity, and ranges by 2-cent differential up to $1.20 for 40 gravity and above. This new schedule for North Texas was 10 cents under the prices posted in Oklahoma and Kansas. Such a 10-cent difference similarly had prevailed generally before.

Magnolia Petroleum Company's schedule met the Humble company prices in the Texas Panhandle, West Texas, East Texas, Mirando district, Tomball field, and Darst Creek, and met Carter Oil Company's prices in Oklahoma. Magnolia adopted for Rodessa (Louisiana and Texas) nearly the same schedule that Standard of Louisiana announced for the regular North Louisiana-Arkansas district fields, the top price being $1.22, contrasted with Standard's $1.25 top price.

Sun Oil Company met the 12-cent increase in East Texas, followed Humble at Conroe, raised Clay Creek from 95 cents to $1, and at Government Wells replaced a 90-cent flat price with a gravity schedule ranging from 90 cents for below 21 gravity and 93 cents for 21-21.9 gravity, by 3-cent differential to $1.02 for 24-24.9 gravity.

For Vinton and Hackberry, Coastal Louisiana, as well as Cotton Lake, West Beaumont and Nome, Texas Gulf Coast, Sun Oil Company adopted the gravity schedule that Humble Oil & Refining Company put into effect in the regular Gulf Coast fields, that is, as follows: below 21 gravity, 95 cents; 21-21.9 gravity, 98 cents; 3-cent differential to $1.13 for 26-26.9 gravity; $1.15 for 27-27.9 gravity; 2-cent differential up to $1.41 for 40 gravity and above. That same schedule was adopted by Sun Pipe Line Company for Spindle Top, Sour Lake, Saratoga, Goose Creek, and other regular Texas Gulf Coast fields.

Postings Are Revised

Continental Oil Company and Barnsdall Oil Company, which January 4 had posted increases of 17 cents a barrel for Mid-Continent crudes, adjusted their postings to the 12-cent general increase by the other purchasers last week.

Dan Moran, president of Continental Oil Company, issued a statement from Ponca City, Oklahoma, saying that the company would meet the crude price schedules put into effect January 28 by several major companies.

"Continental's original action," said Mr. Moran, "merely recognized a statistical and economic situation that was apparent from all the facts available to us and to others. Obviously, however, Continental Oil Company, regardless of statistics and economics, cannot indefinitely continue to pay higher prices for the raw product than are paid by our competitors, and we are therefore going along with them in this adjustment which, while not as large as we had hoped to accomplish, will nevertheless serve as substantial recognition of what is due the producers."

Shell Meets Raises

Shell Petroleum Corporation was among those that met the increased postings in Texas, New Mexico, and southern Louisiana. The company followed Humble's schedule in East Texas, West Texas and New Mexico, and Salt Flat. The company posted 81 cents for Pecos County shallow and 91 cents for Pecos County deep pro-

The Current Situation

Outlook.—Crude market promises to remain steady at lately improved price levels. Gains in product prices in prospect, to compensate for higher crude postings.

Crude Market.—Price increases general in Mid-Continent and Middle West.

Refined Oil Markets.—Generally on upward trend.

Crude Production.—Down 8,605 barrels to 3,191,595 daily.

Crude Runs to Stills.—Up 10,000 to 3,055,000 barrels.

Crude Stocks.—Down 868,000 barrels in week ended January 16, totaling 286,044,000 barrels.

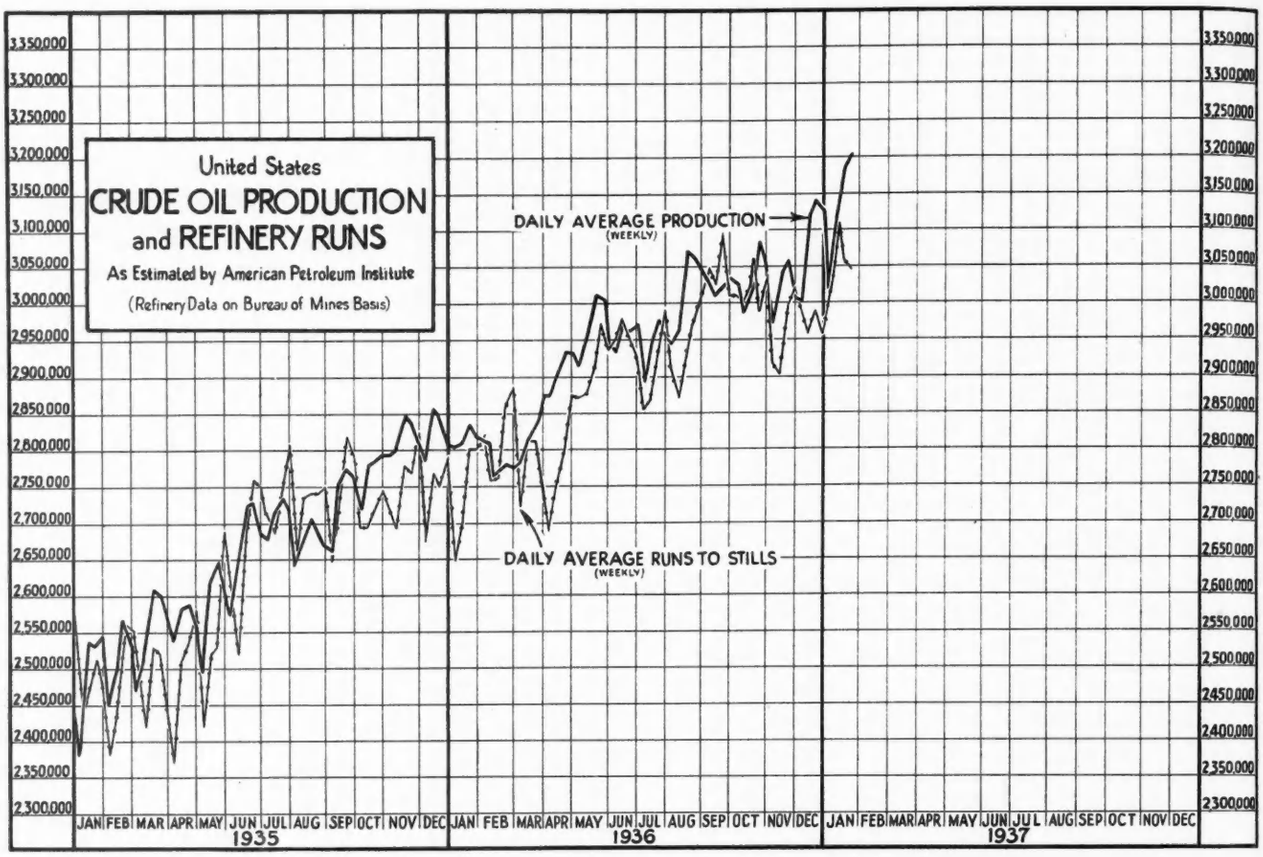
Gasoline Stocks.—Up 1,621,00 barrels in week ended January 23, at 68,180,000 barrels.

Gas and Fuel Oil Stocks.—Down 1,400,000 barrels in week ended January 23, at 103,441,000 barrels.

Drilling.—Completions down 8; total 405 wells.

CRUDE PRICES

Complete table of prices paid for crude oil at the well in principal fields will be found on page 44. Hereafter this schedule will appear only in the first issue of each month except when changes are announced.



duction. Livingston was priced at $1.27, the same as East Texas. New gravity schedules, embodying increases, were posted in the Iowa, Black Bayou, and White Castle fields of southern Louisiana.

Tide Water Oil Company met the 12-cent increase in Oklahoma and Kansas.

Various independent purchasing companies in East Texas met the higher posting there. They included Atlas Pipe Line Company of Shreveport, Bell-General Pipe Line Company, East Texas Refining Company, De Sota Crude Oil Purchasing Corporation, Panola Pipe Line Corporation, Gilliland Oil Company, Frontenac Oil Company, and others. Ohio Oil Company, also, was among those raising the East Texas posting.

The Texas Company revised prices upward in line with the general advance. The company purchases in North Louisiana, North Texas, Conroe, the Texas Panhandle, West Texas, the Texas-Louisiana Gulf Coast, South Texas, South Central Texas, Arkansas, and North Louisiana.

Oklahoma Raise General

Gulf Oil Corporation and Shell Petroleum Corporation met the Oklahoma-Kansas cent increase Friday afternoon to complete the list of major buyers paying the schedule posted by Carter Oil Company.

Companies that previously had met the Oklahoma-Kansas increase included: Stanolind Crude Oil Purchasing Company, Sinclair Prairie Oil Marketing Company, The Texas Company,

Summary of Wells Completed in the United States
Week Ending January 30, 1937

	Completions	Oil Wells	Gas Wells	Failures	Initial Production	Total Completions, 1937	Total Completions this Date, 1936
Alabama	....	....	....	....	.....	....	.....
Arkansas	....	....	....	....	.....	9	
California	25	21	....	4	20,805	101	68
Colorado	....	....	....	....	.....	2	.....
Florida	....	....	....	....	.....	....	.....
Illinois	....	....	....	....	.....	....	.....
Indiana	7	3	....	4	9	16	24
Kansas	34	26	1	7	21,068	180	102
Kentucky	3	1	....	2	15	39	.....
Louisiana	4	4	....	....	994	45	46
Michigan	14	6	....	8	325	86	79
Mississippi	....	....	....	....	.....	....	.....
Montana	5	3	1	1	375	12	10
Nebraska	....	....	....	....	.....	....	.....
New Mexico	11	8	....	3	11,750	63	23
New York	....	....	....	....	.....	....	.....
Ohio	23	7	8	8	243	191	126
Oklahoma	59	40	6	13	44,647	277	205
Pennsylvania	....	....	....	....	.....	7	.....
Texas	205	138	7	60	311,679	1,160	787
Utah	....	....	....	....	.....	....	.....
West Virginia	14	....	8	6	.....	62	76
Wyoming	1	1	....	....	380	11	4
Total this week	405	258	31	116	412,290	2,252	1,560
Total last week	413	289	47	77	433,160	....	.....
Total this year	2,252	1,473	233	546	1,915,997	....	.....

Comparison of Permits Granted for New Wells

STATE	Week Ending Jan. 30	Total this Mo.	Total this Year	Total this Date Last Year	1936 Year Total
Arkansas	....	....	....	8	103
California	28	166	166	60	1,054
Louisiana	26	84	84	125	1,107
Kansas	34	114	114	148	1,873
Michigan	23	74	74	69	762
Oklahoma	47	153	153	229	2,594
Texas	455	1,352	1,352	1,035	15,582
Total	611	1,943	1,943	1,674	23,075

SLIGHT DECLINE

Oklahoma-Kansas drop offset by other states

UNITED STATES crude oil production during the week ended January 30 was but slightly under the all-time peak that was set in the previous week.

The output last week averaged 3,191,595 barrels daily, or 8605 barrels a day less than in the previous week, and 193,195 barrels a day more than the Bureau of Mines recommendation.

The decrease of last week was the result of declines in Oklahoma, Kansas and California, and occurred despite slight increases in Texas, Louisiana and New Mexico.

Oklahoma production, averaging 587,750 barrels daily, was down 16,525 barrels a day from the previous week, but still was 14,650 barrels a day above the Bureau of Mines recommendation.

Kansas averaged 173,625 barrels daily, or 5250 barrels a day less than in the previous week and 8025 barrels a day less than the bureau suggestion.

California output was off 3,000 barrels in averaging 583,000 barrels daily, and was 24,000 barrels a day in excess of the Bureau of Mines recommendation.

Texas averaged 1,262,200 barrels daily, or 10,200 barrels a day more than in the previous week and 86,200 barrels a day more than the state's allocation on the bureau schedule.

Louisiana output rose 7975 barrels, having averaged 254,725 barrels a day, or 38,425 barrels a day more than the state's quota.

New Mexico showed a 200-barrel increase in averaging 92,800 barrels daily, and the state was 13,000 barrels above its allocation.

Tide Water Oil Company, Skelly Oil Company, Barnsdall Oil Company, Kanotex Refining Company, Mid-Continent Petroleum Corporation, Pure Oil Company, Rock Island Refining Company, and others.

Crude production for Oklahoma has been in excess of 600,000 barrels daily for the past two weeks.

The promptness of refiners who depend wholly on Oklahoma and Kansas crude for raw material in meeting the price increase was evidence that even the record field output is leaving no free oil for February.

The Oklahoma Corporation Commission January 28 fixed the allowable for that state at 581,900 barrels daily, an increase of 8800 barrels daily over January. The order matches the estimate of February demand by the United States Bureau of Mines.

Refined Markets

Two Middle West snowstorms have cut heavily into gasoline consumption, with the result that the price for spot sales has been sagging. Every indication at the end of the week, however, was that the major refiners would make an effort to mark gasoline prices up to match the step-up in crude prices.

Kerosene and heavier fuels are the immediate hope of a money return sufficient to balance the crude price increase. Kerosene prices advanced ⅛ cent early last week to a top of 4⅛ cents for 41 to 43 gravity material. Firmness of the price and demand gave hope that this grade will reach its high of February, 1936, which was 4½ cents a gallon.

Heavier fuel oils, especially those used by railroads, gave a signal for the crude advance early last week, when buyers began seeking higher deliveries on contracts. Most of the smaller refineries sell heavier oils to industrial users with the price based on the price of crude oil. This material will therefore keep step with the crude price.

Pure Transportation Company posted a 10-cent increase effective Friday morning, January 29. Other carriers followed.

New price is $1.42 for Mt. Pleasant (includes Porter-Jasper, Sherman and New Buckeye district), and $1.26 for Ogemaw grades (includes West Branch and new Arenac County field).

United States Crude Oil Production

Estimates Compiled by The OIL WEEKLY

DISTRICT OR STATE	Bureau of Mines Recommendation (Daily in Jan.)	ACTUAL PRODUCTION: BARRELS DAILY FOR WEEK ENDING January 30	January 23
TEXAS—			
Texas Panhandle	.....	72,100	68,400
North Texas	.....	65,600	65,300
West Central Texas	.....	32,700	32,900
West Texas	.....	170,600	170,800
East Central Texas	.....	105,200	90,300
East Texas Field	.....	449,400	448,800
South Texas	.....	186,800	186,200
Texas Gulf Coast	.....	179,800	180,300
Total Texas	1,176,000	1,262,200	1,252,000
OKLAHOMA—			
Oklahoma City	.....	139,175	155,975
Seminole Area	.....	131,475	134,500
Tatums	.....	4,375	3,825
Lucien	.....	12,600	12,500
Fitts	.....	82,100	80,600
Edmond	.....	19,625	18,425
Others	.....	198,400	198,450
Total Oklahoma	573,100	587,750	604,275
KANSAS—			
Ritz-Canton	.....	6,150	6,150
Voshell	.....	2,800	2,800
Nikkel-Hollow	.....	3,625	3,650
Sedgwick	.....	4,925	4,975
Burrton-Haury	.....	14,625	14,725
Lorraine	.....	5,175	6,075
Oxford	.....	2,700	2,675
Others	.....	133,625	137,825
Total Kansas	165,600	173,625	178,875
LOUISIANA—			
North Louisiana	.....	86,125	76,950
Louisiana Gulf Coast	.....	168,600	169,800
Total Louisiana	216,300	254,725	246,750
ARKANSAS	27,300	26,895	25,700
CALIFORNIA—			
Long Beach	.....	62,300	63,000
Santa Fe Springs	.....	44,500	43,000
Huntington Beach	.....	37,000	38,000
Dominguez	.....	24,500	21,000
Inglewood	.....	12,500	12,000
Ventura Avenue	.....	32,500	34,000
Seal Beach	.....	9,200	9,000
Midway-Sunset	.....	65,000	66,500
Elwood	.....	9,500	9,500
Kettleman Hills	.....	65,000	78,000
Mountain View	.....	21,000	21,000
Playa del Rey	.....	10,500	11,000
Others	.....	176,500	180,000
Total California	559,000	583,000	586,000
MOUNTAIN STATES—			
Wyoming	40,100	47,600	47,600
Montana	14,400	16,400	16,300
Colorado	4,500	3,600	3,500
Total Rocky Mountain States	59,000	67,600	67,400
NEW MEXICO	79,800	92,800	92,600
EASTERN STATES	112,200	113,700	116,900
MICHIGAN	29,200	29,300	29,700
Total United States	2,998,400	3,191,595	3,200,200

CRUDE OIL PRICE QUOTATIONS

(Figures Represent Basic or Flat Prices—Revised to January 29, 1937)

DISTRICT	Bottom Grav.	Dif.	Top Grav.	Date
Arkansas				
El Dorado (Light) and Rainbow	24—$0.90	2¢	40—$1.22	1-28-37
El Dorado East Field and Smackover	* .90			1-28-37
North Louisiana	24— .90	2¢	40— 1.22	1-28-37
Urania	* .97			1-10-36
Rodessa	24— .93	2¢	40— 1.25	1-28-37
South Louisiana	Below			
Vinton, Hackberry	20— .95	3¢	26— 1.13	
	27— 1.15	2¢	40— 1.41	1-28-37
Iowa	19— .84	2¢	22— .91	
	23— .94	3¢	26— 1.03	
	27— 1.05	2¢	34— 1.19	1-28-37
Black Bayou, White Castle	19— .94	2¢	22— 1.01	
	23— 1.04	3¢	26— 1.13	
	27— 1.15	2¢	34— 1.29	1-28-37
Rocky Mountain States				
Salt Creek	29— *.94	2¢	40— 1.18	1-10-36
Elk Basin	*1.30			1-28-37
Frannie (Light)	* .70			11- 4-36
Frannie (Heavy)	* .62			11- 4-36
Grass Crk., Wyo., (Light)	*1.30			1-28-37
Grass Creek (Heavy)	* .62			11- 4-36
Hamilton Dome	* .57			11- 4-36
Big Muddy	*1.23			1-28-37
Rock Creek, Wyo.	*1.20½			1-28-37
Sunburst	*1.20			1-28-37
Lance Creek	* .97			1-28-37
Osage	*1.08			
Cat Creek	*1.07			8-25-33
Cut Bank	*1.35			6- 3-36
Pondera	*1.05			9-29-33
Hog Back, N.M.	*1.00			9- 8-33
Lea County, N.M.	25— .78	2¢	40— 1.08	1-28-37
Mid-West States				
Lima	*1.25			1-28-37
Illinois	*1.35			1-28-37
Princeton	*1.35			1-28-37
Western Kentucky	*1.40			1-28-37
Pennsylvania				
Bradford	*2.57			12-28-36
Sw. Pa. Pipe Line	*2.32			12-28-36
Eureka Pipe Line	*2.27			12-28-36
Buckeye Pipe Line	*2.12			12-28-36
Corning Grade	*1.32			12-18-36
Michigan				
Central Michigan	*1.42			1-29-37
Canada				
Petrolia	*2.10			9- 9-33
Oil Springs	*2.17			9- 9-33
Mexico				
F.O.B. Tampico (Net)	‡0.96			

*All gravities—flat rate.
‡Average price, all oil sales being to small refineries.
‡U. S. Currency, buyer pays tax.

DISTRICT	Bottom Grav.	Dif.	Top Grav.	Date
Oklahoma-Kansas	24—$0.98	2¢	40—$1.30	1-28-37
N. and N.-C. Texas	28— .96	2¢	40— 1.20	1-28-37
Texas Panhandle				
Gray County	34— *.96	2¢	40— 1.08	1-28-37
Carson-Hutchinson	34— .91	2¢	40— 1.03	1-28-37
West Texas				
Andrews, Crane, Crockett, Ector, Glasscock, Howard, Winkler, Upton	25— .78	2¢	40— 1.08	1-28-37
Pecos	*.91			1-28-37
West Central Texas	28— .94	2¢	40— 1.18	1-28-37
East Central Texas	28— 1.03	2¢	40— 1.27	1-28-37
East Texas	*1.27			1-28-37
Talco	*.73			1-28-37
Rodessa	28— .98	2¢	40— 1.20	1-28-37
Texas Gulf Coast				
Anahuac - Dickinson, Flour Bluff, Turtle Bay Conroe, Tomball, Satsuma	30— 1.16	2¢	40— 1.36	1-28-37
	28— 1.20	2¢	40— 1.44	1-28-37
†Goose Creek, Hull, Liberty, Orange, Pierce Junction, Barbers Hill, Raccoon Bend, Sugarland, West Columbia, Thompsons, Mykawa, Amelia	20— .95	3¢	26— 1.13	1-28-37
	27— 1.15	2¢	40— 1.41	1-28-37
South and S. W. Texas	Below			
Refugio type heavy and light	20— .95	3¢	26— 1.13	
	27— 1.15	2¢	40— 1.41	1-28-37
Mirando type heavy and light	20— .90	3¢	26— 1.08	
	27— 1.10	2¢	40— 1.36	1-28-37
Pettus	*1.37			1-28-37
Salt Flat	*1.09			1-28-37
Darst Creek	*1.09			1-28-37

* All gravities—flat rate.
† Gulf Coast prices as posted by Humble Oil & Refining Company.

MAJOR PRICE CHANGES

	Penna. (Nat. Tr.)	Mid.-Cont. (36 Gr.)	Calif. (26 Gr.)
June 19, 1933	Up 10	Up 19	.....
June 26, 1933	Up 10	.....	Up 9-12
July 6, 1933	Up 13	Up 10	.....
July 17, 1933	Up 15	.....	.....
July 28, 1933	Up 15	.....	.....
August 11, 1933	Up 10	.....	.....
August 24, 1933	.....	Up 10	.....
August 30, 1933	Up 15	.....	.....
September 6, 1933	Up 10	Up 10	Up 15
September 8, 1933	.....	Up 15	.....
May 1, 1934	Up 10	.....	.....
November 6, 1934	Cut 25	.....	.....
December 6, 1934	Cut 25	.....	.....
January 4, 1935	Up 15	.....	.....
February 4, 1935	Up 15	.....	.....
May 16, 1935	Cut 15	.....	.....
June 26, 1935	Cut 15	.....	.....
July 16, 1935	Cut 10	.....	.....
August 29, 1935	.....	.....	Cut *4
September 6, 1935	Up 5	.....	.....
October 29, 1935	Up 15	.....	.....
November 1, 1935	.....	.....	Up *20
November 18, 1935	Up 15	.....	.....
December 6, 1935	.....	.....	Up *9
January 9, 1936	.....	Up 10	.....
January 13, 1936	Up 15	.....	.....
February 26, 1936	.....	.....	Up 15
December 28, 1936	Up 12	.....	.....
January 28, 1937	.....	Up 12	.....

CRUDE PRODUCTION TAXES

Oklahoma—Five percent of gross value less royalty interest.

TEXAS—2¾ cents or 2¾ percent, whichever is higher.

Louisiana—From four to 11 cents a barrel, depending upon gravity.

Arkansas—2.6 percent of gross market values.

Montana—Two percent of gross value at well and ⅜ of 1c per barrel.

Wyoming and New Mexico—Production tax based upon state and county assessments.

California—.66443 mills per barrel of oil produced and 17.39 cents per acre on proved oil lands.

* All gravities—flat rate.
+ Signal Hill 26 gravity.
‡ Seal Beach 26 gravity.

CALIFORNIA OIL PRICES

(All gravities above those quoted take highest prices of that field. Effective February 26, 1936)

Gravity	Signal Hill	Seal Beach Alamitos Heights	Huntington Beach	Inglewood	Playa Del Rey	Olinda Brea Canyon	Athens Rosecrans	Elwood Terrace	Torrance	Richfield	Whittier East Coyote La Habra	Montebello	West Coyote Hills	Santa Fe Springs	New Hall McKittrick Kern River Round Mountain	Mountain View	Midway-Sunset Buena Vista Hills Elk Hills	Lost Hills	Coalinga	Wheeler Ridge
14-14.9	$.80	$ 79	$.78	$.79	$.80	$.76	....	....	$.80	$.76	$.76	$.77	$.78	.....	$.70	....	$.70	$.70	$.70	....
15-15.9	.80	.79	.78	.79	.80	.76	....	....	.80	.76	.76	.77	.78	.....	.70	....	.70	.70	.70	....
16-16.9	.80	.79	.78	.79	.80	.76	....	....	.80	.76	.76	.77	.78	.....	.70	....	.70	.70	.70	....
17-17.9	.80	.79	.78	.81	.80	.76	....	....	.80	.76	.76	.77	.78	.....	.70	....	.70	.70	.70	....
18-18.9	.80	.79	.78	.84	.80	.78	....	....	.82	.76	.76	.77	.78	.....	.70	....	.70	.70	.70	....
19-19.9	.82	.79	.82	.87	.84	81	....	....	.85	.76	.78	.77	.78	.....	.70	$.70	.74	.74	.71	$.70
20-20.9	.85	.79	.85	.90	.88	.84	....	....	.88	.78	.82	.77	.80	.....	.....	.70	.78	.78	.72	.70
21-21.9	.88	.79	.89	.93	.93	.88	....	....	.91	.80	.85	.77	.84	$.78	.....	.73	.82	.82	.74	.70
22-22.9	.92	.82	.92	.96	.98	.92	....	....	.93	.84	.89	.79	.88	.78	.....	.77	.87	.86	.78	.72
23-23.9	.95	.86	.96	.99	1.02	.96	$.84	....	.96	.88	.93	.82	.92	.78	.....	.80	.92	.90	.82	.76
24-24.9	.99	.91	1.00	1.02	1.06	.99	.88	....	.99	.91	.96	.85	.96	.82	.....	.84	.97	.94	.86	.79
25-25.9	1.03	.95	1.03	1.05	1.11	1.03	.93	....	1.02	.95	....	.89	.99	.86	.....	.88	1.01	.98	.90	.83
26-26.9	1.06	1.00	1.07	1.09	1.16	1.06	.98	....	1.05	.98	....	.92	1.03	.90	.....	.91	1.06	1.02	....	....
27-27.9	1.10	1.05	1.11	1.12	....	1.10	1.03	....	....	1.02	....	.96	1.06	.95	.....	.95	1.10	1.06	....	....
28-28.9	1.14	1.10	1.14	1.15	....	1.14	1.07	....	....	1.06	....	.99	1.10	.99	.....	.99	1.15	1.10	....	....
29-29.9	1.17	1.15	1.18	1.18	F.O.B.	1.17	1.12	....	....	1.09	....	1.03	1.14	1.03	.....	1.02	1.20	1.14	....	....
30-30.9	1.21	1.19	1.22	1.21	Pipe	1.21	1.17	F.O.B.	....	....	....	1.07	1.17	1.08	.....	1.06	1.25	1.18	....	....
31-31.9	....	.....	....	1.24	Line	1.24	1.22	Ship	....	Kettleman Hills		1.11	1.21	1.12	.....	1.09	1.29	....	....	....
32-32.9	....	....	....	1.27	....	1.27	1.27	....	....	1.19		1.14	1.25	1.16	.....	1.13	1.34	....	....	....
33-33.9	....	....	....	....	....	....	1.32	$.128	....			1.18	1.28	1.20	.....	1.17	1.38	....	....	....
34-34.9	....	....	....	....	....	....	1.37	1.32	....	1.23	....	1.22	1.32	1.25	.....	1.20	.....	....	....	....
35-35.9	....	....	....	....	....	....	1.42	1.35	....	1.27	....	1.25	....	1.29	.....	....	.....	....	....	....
36-36.9	....	....	....	....	....	....	1.46	1.39	....	1.31	....	1.29	....	1.33	.....	....	.....	....	....	....
37-37.9	....	....	....	....	....	....	1.51	1.43	....	1.35	....	1.32	....	1.37	.....	....	.....	....	....	....
38-38.9	....	....	....	....	....	....	1.56	....	....	1.39	....	1.36	....	1.42	.....	....	.....	....	....	....
39-39.9	....	....	....	....	....	....	1.61	....	....	1.43	....	1.40	....	.....	.....	....	.....	....	....	....
40-40.9	....	....	....	....	....	....	1.66	....	....	....	....	1.43	....	.....	.....	....	.....	....	....	....

STOCKS DECLINE

East Texas gasoline held is at minimum volume

Tyler.—Surplus stocks of gasoline held by independent refiners in East Texas were reduced to a minimum within the 10-day period preceding the general crude price advance through the purchase of about 1000 cars by majors. The motor fuel was bought at prices ranging from 4¼ to 4½ cents per gallon. Outside of the support given by majors the East Texas gasoline market has been somewhat dormant. Immediate outlook is not encouraging for plant owners who are now confronted with a 12-cent hike in crude prices with very little opportunity to advance gasoline quotations proportionately. A minimum increase of one-fourth cent per gallon is needed to compensate for the higher crude price.

ASKS INJUNCTION

Sabino Gordo claims title to confiscated land

Sabino Gordo Petroleum Corporation has filed suit in a Mexico City court for an injunction against enforcement of the order of the ministry of national economy that a large tract of land in the Sabino Gordo region, Tamaulipas state, be incorporated in the federal oil reserves. The company contends that the ministry overlooked the fact that it has clear titles to the property which it purchased several years ago.

Hot Oil Report

[*Continued from page 13*]

say that in all matters where the Federal Government is a party, venue be placed in the District of Columbia . . . Further, a most unwholesome situation is developing in Travis County. Dockets are crowded. The feeling is prevalent, whether justified or not, that certain lawyers are specialists in certain lines and . . . that for private litigant to be assured a fair trial he must secure counsel in Travis County . . . Attorneys without recognition in certain communities have suddenly . . . gained reputation of being successful in Travis County in matters where the State is party . . .

Texas Petroleum Council

Formation of the council in 1933 was described. It was formed as an "educational institution." This concern has not functioned as an educational institution but as a vigilante group . . . A very large amount of money has been collected, the bulk from major companies . . . The comparatively large group of independents who originally contributed to the organization have withdrawn their support."

"It was the testimony of Lloyd Wheelock, president, that this group of lawyers, to-wit, John Kilgore of Wichita Falls and Tom C. Clark of Dallas, were employed for two main purposes, to assist the commission in drawing up forms. The commission has informed this committee that the council did not draw these forms, but it was done through regularly constituted State employes."

The Texas Bankers Association and the Texas Petroleum Council brought about appointment of the tender board. Fred W. Weeks of Tyler, "at a salary of $25,000 a year," appeared before the board. "It seems his duties were to appear in the role of amicus curae, to protest tenders. "He was assisted by paid investigators. The council maintained auditors "to exercise a species of surveillance over the commission."

"It seems inconceivable that a concern handling such a vast amount of money . . . would have no written records. If this council were solely imbued with high motives and pure objectives and, in fact, were not engaged in a concerted effort to harass competition, more complete records would have been available . . .

"It is the committee's thought that the attorney general should feel free to make a complete investigation of the council to determine whether contributors should be prosecuted for violating the anti-trust laws . . . If activities of the council are ultra vires, contributors thereto are liable individually and the charter should be revoked . . ."

Tighter Policing

[*Continued from page 12*]

legislation is of "primary importance in connection with the conservation of the Naval oil reserves and future Naval fuel supplies," Secretary of the Navy Swanson told the House Committee on Naval Affairs that the bill was in line with the President's program and called attention to the fact that no money is to be appropriated at this time.

In fact, he said, it would be impossible now to estimate the cost of clearing the Naval oil reserves of private operators. If all lands now under lease could be cleared through exchanges of other lands outside the reserves, he pointed out, there would be no expense, but if it is necessary for the government to acquire the lands by purchase the cost will depend upon the arrangements which are made in each individual case.

For several years the government, through the Department of Justice, has been endeavoring to regain title to lands in the California naval reserves which are now in the possession of oil companies through acquisition from the state.

The most important of these cases is the so-called "section thirty-six" case, in which the Secretary of the Interior two years ago determined that title to a section of land in Reserve No. 1 has remained in the United States and has never been vested in the State of California or its transferees: In this action, the government seeking to dispossess the claimants (Standard Oil Company of California, Frank J. Carman, Mrs. Sidney H. Greeley, et al), and to recover the value of the oil and gas produced from the section during the period it has been in their possession, estimated at $12,800,000 in principal amount and increased to approximately $24,500,000 by interest which the government claims.

Another case involves lands where the claimants likewise hold title as transferees of the state, and in a third case the department is attempting to recover some $5,188,000 and interest from the estate of the Late Edward L. Doheny.

Texas Allowable

[*Continued from page 13*]

Major increases in allowables for fields since January 1 follow:

West Texas

In West Texas: Estes, 2527 to 5021 barrels, increase 2494 barrels; Goldsmith, 1559 against 3295 barrels, up 2366 barrels; Henderson, 1562 to 2105, up 543 barrels; Keyes, 3220 barrels to 5664 barrels, up 2444; Keystone, from 1556 to 3106, up 1550 barrels; Penwell, 5410 to 6584, up 1174 barrels; Sayre up 2123 barrels from 6187 to 8310 barrels; Waddell from 1100 to 2120, up 1020 barrels; North Ward, 8892 to 9558 barrels, increase of 729; South Ward, 13,822 to 14,438 barrels, increased 616 barrels; Yates, 28,048 to 28,530 barrels, 482 barrel increase.

In East Central Texas: Rodessa, 32,-175 barrels to 34,475, advance of 2300 barrels; Sulphur Bluff advanced 500 barrels from 750 to 1250 barrels; Talco, 12,069 to 15,489, up 3420 barrels.

Southwest Texas Raises

Southwest Texas fields: Heyser, 1440 to 2240, up 800 barrels; Placedo, 6475 to 7080 up 605 barrels; Tom O'Connor, 6225 to 9025 barrels, increased 2800; New Refugio, 2925 to 3525, up 600 barrels; Comitas, 1878 to 2445, increase of 567 barrels; Flour Bluff, 1300 to 1900, up 600 barrels; North Government Wells, 4900 to 5414 barrels, increased 514; Loma Novia, 15,200 to 19,-577, up 4377 barrels; Lopez, 6336 to 8562 barrels, 2226 barrel gain; O'Hern, 3768 to 5208, 1440 barrel increase; Plymouth, 11,422 to 12,948, up 1526 barrels; Samfordyce, 5382 to 6918, up 1536 barrels; Seven Sisters, up 2904 from 8064 to 10,968 barrels; Shallow Saxet, 5821 to 7291, up 1470 barrels; Saxet Frio, 11,500 to 12,800, gain of 1300 barrels; Taft, 2207 to 3167, increase of 960 barrels.

Increases in Gulf Coast field allowables follow: Anahuac, 8800 to 12,229 barrels, up 3429; Conroe, 40,728 to 43,-994 barrels, gain of 3266 barrels; Hastings, 8156 to 10,922, up 2766 barrels; South Houston, up 401 from 5901 to 6302 barrels; Sugarland, 4000 to 5000 barrels, boosted 1000; Thompson, 8110 to 9610 barrels, increase of 1500 barrels; Tomball, 7359 to 8508 barrels, a gain of 1149 barrels in its allowable.

WORLD DEVELOPMENT and TECHNOLOGY

Edited by
WM. V. GROSS, Associate Editor

Japan's Oil Needs

RUSSIAN PLOTTERS WOULD NOT HAVE HELPED SITUATION MUCH

OIL reserves and present production of the Russian island of Sakhalien would have been turned over by anti-government factions to Japan in the event of a war with the United States, according to testimony presented in a Moscow, U. S. S. R., court in convicting 17 U. S. S. R. citizens of high treason last week. Chief among the defendants were Karl Radek, former editor of Izvestia, one of Russia's most powerful newspapers, and George Piatakov, former assistant commissar of heavy industry for the U. S. S. R. Radek plead guilty.

While most of the press dispatches reaching the United States from Moscow appeared to be flavored with "court-the-good-will-of-the-U. S. A." propaganda, certain students of international supply and demand figures are unable to see where turning over Sakhalien's oil production to Japan in the event of a war with the United States would make a great deal of difference in the cruising range of Japan's navy in case of hostilities.

Japan Already Controls It

It is pointed out, as a matter of fact, that the Japanese have had practical control of Sakhalien oil for more than a decade, although the island is territorially and politically Russian. The Japanese hold leases on the most valuable commercially profitable production there. They have taken full advantage of the terms of these leases, it is said, to the point of ejecting forcefully on certain occasions Russian inspectors on the grounds that said inspectors were agitators and interfering with commercial development of the oil properties. So, in the final analysis, the conspirators against the regime of Stalin in Russia would have had little to offer Japan in the way of increasing the effectiveness of her navy.

Moreover, Sakhalien production is available to seaboard only about 4½ months of the year, due to its proximity to the Arctic circle—and Japan is not in a position to time its naval warfare against any major world power to fall within 7½ months of the year. The antagonist, whoever it might be, would have something to say about that.

Sakhalien Production History

Records show that Sakhalien production started in 1923 with an annual yield of 6923 barrels. This output was swelled to 84,000 barrels in 1924, to 100,000 barrels in 1925, and to 130,000 barrels in 1926. The output in 1927 was estimated at 440,000 barrels; in 1928 at 677,000; 1,160,000 barrels in 1929; 1,670,000 barrels in 1930; 2,000,000 barrels in 1931.

The above refers to production in the northern part of the island, where most of the desirable oil acreage was checkerboarded between the Japanese and the Russians, with the Japanese holding more than a nominal control of those blocks in the checkerboard which were commercially profitable, according to available data.

Figures coming from Japan indicate the nation's production in North Sakhalien in 1931 totaled 1,309,000 barrels and about the same amount in 1932. In 1933 the production dropped to 1,050,000 barrels, but in 1934 it had increased to 1,204,000 barrels. In 1935 the yield from North Saghalien Oil Company's leases was 130,000 tons, or about 910,000 barrels. In addition, the company bought about 40,000 tons, or 280,000 barrels from the Soviet Oil Trust operating on the island. Japan's plans were to spend 4,000,000 yen (about $1,200,000) prospecting on the island in 1936, and the production quota for that year was set at 150,000 tons, or 1,050,000 barrels, practically all of which, it was estimated, would be used by the Japanese navy in peacetime maneuvers.

Gap Between Production and Consumption Widens

But there are other needs for petroleum and petroleum products by a nation than those of the navy. And the important fact remains that Japan is importing considerably more oil than she is producing at home and in Sakhalien. Moreover, the more important fact remains that the curve showing Japan's trend of domestic consumption continues to rise so much faster than the curve showing her increase in domestic production that the vertical gap between these two lines is constantly becoming greater. Figures of a major company in Japan, as a matter of record, showed an increase of 23.9 percent in importation of petroleum products during 1935 over 1934, exclusive of purchases by the government. (Production went down.) The greatest increase, 42 percent, was in importations of heavy oil, according to these figures, while the next greatest was that of machine oil, 19 percent.

Regardless of Japan's current dependence upon other countries for oil supplies, it should be pointed out that the nation through highly patriotic private enterprise has during the past few years been strenuously attempting to attain independence in the matter of petroleum supplies.

Big Combine Formed

It will be remembered in 1936 that formation of a combine involving Mitsui Company, Mitsubishi Shoji Kaisha and Sumitomo Company was announced, the combine having as its objective development of production in the East Indies. Capitalization was 50 million yen (about $15,000,000). Most of the large and desirable concessions in the East Indies at that time had already been taken up by the Royal Dutch combine and other major operators, so the move was not regarded as likely to have any immediate effect on world movement of crude. Thus far it has not. Previous to formation of the combined, though, there was a consolidation of Borneo Oil Company and Mitsui Company, a consolidation which automatically gave the above combine a daily average production of about 13,600 barrels as a starter. No news of a substantial increase in this daily recovery for the combine has come out since then.

Serious efforts to develop more commercial production within Japan proper continue to be made. Nippon Oil Company has launched a deep drilling campaign in an attempt to find oil beneath high pressure gas sands existing below current producing horizons in some of the fields there. Fights against high pressures retarded exploration of deeper horizons in the islands of Nippon proper for a number of years, but methods are being developed to cope with the situation, advices from Tokyo indicate.

AUSTRIA YIELD UP

Current rate indicates increased 1937 output

Austria's domestic crude oil production, while still insignificant in relation to production of other nations, has developed a definite trend upward through the past few years, indicating the country may some day attain inde-

pendence so far as petroleum product requirements are concerned. Ninety-five percent of Austria's petroleum product needs continue to be imported, but a few years ago the imports represented better than 99 percent of domestic consumption.

To illustrate the trend, Gardner Richardson of Vienna reports 1932 domestic crude production in Austria was 120 metric tons (a ton equals about 7 barrels); 1933 production was 856 metric tons; 1934, 4178 metric tons; 1935 was 6616 tons, and 1936 crude production about 12,000 metric tons. Austria's current rate of production is from 1200 to 1500 metric tons per month, indicating a recovery of from 14,400 to 18,000 tons in 1937.

Late in 1936, Rakydanubia (Anton Raky) developed a new producer in the Zistersdorf district, 50 kilometers northeast of Vienna, which has a production rating of 10 tons per day. The other producer of Rakydanubia at Zistersdorf yields about one ton per day.

Austria's largest producer, according to Richardson, yields from 30 to 40 metric tons per day. It is the property of Erdolproduktionsgesellschaft, which has another well that has been producing 10 tons per day since September.

Barinoff Reports

STAGNATION AND CONSERVATISM CRIPPLE RUSSIAN OIL INDUSTRY

By LUCIEN ZACHAROFF

M. BARINOFF, head of the chief oil administration of U. S. S. R., who was the leader of a commission visiting the United States in 1936 to study American methods of drilling, production and manufacture of oil field equipment, said upon recent return to Russia, "Yes, we are behind the United States in development of our oil industry. We must work hard and persistently to overtake and leave behind the Americans."

Barinoff was thus quoted in an editorial in Za Industrializatziu, influential organ of the commissariat of heavy industry. The editorial sounded the keynote for the conduct of the Russian oil industry in 1937 and stated a much clearer picture of what's what in American technique was brought home by the head of the chief oil administration, which has control over all of the various oil trusts in Russia.

Conclusions of Commission

Conclusions drawn from the trip to the United States by Barinoff's commission embraced the following:

"Our falling behind is not at all expressed in the absence of some super-industrial equipment, but in the failure to utilize, modernize and perfect that richest of mechanical complexes with which the country has armed the oil-bearing regions. It is expressed in the tardiness, stagnation and conservatism of the workers in many of our oil trusts, in the shortcomings of organization in operating newly prospected or assimilating fields. Here and here alone must the causes of our backwardness be sought."

In this connection, Za Industrializatziu stresses the importance of the order of Commissar of Heavy Industry Ordjonikidze, which was reported by this correspondent in The Oil Weekly for October 19, 1936. That order gave explicit directions for speeding up prospecting and assimilation of new fields, drilling, exploitation and construction.

The significant editorial concludes with a reminder that the U. S. S. R. is the richest oil nation in the world, and that the next move is that of the administrators who are in charge of production.

Leninneft Trust Increases Yield

Experience of one Azerbeidzhan oil trust—the Leninneft—appears to bear out the correctness of the appraisal given the situation in Commissar Ordjonikidze's famous order last year. In defiance of the prevailing notions about the naturally diminishing returns, this trust, by a painstaking concentration on low-output holes, had completed its year's program ahead of schedule. The head of this trust, Budarian, gave the secret of their success when he said at Baku that he and his associates had analyzed the resources at their disposal, and without folding their hands in expectation of super-equipment, went to work with the equipment on hand, while many other trusts in the Baku fields scorned to exploit low-output holes.

How optimum concentration on and improvement through renovation of the holes, changing the pumping tempo and the length of pump strokes yields results was shown by the Leninneft trust in the case of well No. 675, for instance. It used to produce 3½ tons a day, its output gradually dwindling to 1 ton. Through proper attention the original daily output was restored, and those who are responsible for it believe that their methods can ultimately enable many other Baku holes to give from 5 to 6 tons daily.

Once backward Bashkiria is fairly on the way to become an important Soviet source of oil. The discovery of oil is providing impetus to the little republic's economic and cultural development. About 170 kilometers away from its capital city, Ufa, in the valley of the Belaya River, an oil city is growing up.

Expect Million Tons From Ishimbaevo

Ishimbaevo fields are expected to present the U. S. S. R. this year with at least 1,000,000 tons of oil. The drilling program in 1937 calls for more than 165,000 meters, as compared with 40,600 meters in 1936. A refining plant is already in operation. A cracking mill is functioning.

On the basis of successes of the oil works, other enterprises are coming up. A synthetic rubber factory will be built. A 170-kilometer, wide-gauge railroad from Ufa has been constructed.

New Fields Found

New oil-bearing regions are being opened up in the U. S. S. R. At Izberbash, Dhagestan, well No. 8 is producing 200 tons daily. Initially it was 500 tons. Another rich section of Dhagestan to be worked soon is Achisu. Seven holes are being produced and 11 more are being drilled. The Izberbash productive area is estimated at 400 hectares (2.47 acres to the hectare). At Achisu, the prospecting thus far indicates the possibility of 500 holes. The two sections in question are expected to yield another 1,000,000 tons in 1937.

In connection with the new discoveries, Chief Barinoff visited Grozny and declared: "The reserve at Izberbash is another proof of great opportunities before the Grozny oil workers for the fulfillment of their self-imposed obligation to give a daily minimum of 10,334 tons during the Stakhanoff 20-day drive. (The Stakhanoff movement of industrial rationalization has been sweeping the country during the past year and a half.)

Barinoff also hinted in his statement that it is not the rank-and-file employes in drilling and exploitation work who are to pull themselves together, but rather the commanding personnel.

Pirsagat fields in the Baku territory have been a source of great satisfaction to the commissariat of heavy industry ever since their discovery four years ago by a group of prospecting geologists. Well No. 27 has been yielding 400 tons per day. Careful laboratory analysis of all developments, favorable and unfavorable, is one of the mainstays of the good work being done there.

On the other hand, the Prikamneft Trust at Kama has been falling down, its year's results amounting to only 65 to 70 percent of the official plan. Poorly organized transportation and flow of equipment was blamed. Writing from Perm, Engineer V. Pletneff complained of beaurocracy and failure to live up to the administration's contractual agreement to pay certain amounts to the specialists.

MEXICO

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Mex. Eagle, El Plan 62, El Plan, Minatitlan, Vera Cruz state	1135	2820
Amer. Int. Fuel & Pet., Porc 11, Altamira 99, Altamira Mun., Tamaulipas state	*	1940
Gulf Coast Corp., Cacalilao 362, Cacalilao, Panuco Mun., Vera Cruz state	32	1570
Hamilton & Devine, Delgado 4, Altamira, Tamaulipas state	*	1940
Fidel C. Martinez, Lajitas 1, Mier Municipality, Tamaulipas state	¶1½	2035
Pedro Navarro Sanchez, Sandoval 1, Tepetate, Tantima Mun., Vera Cruz state	151	2100
Cia. Petrolera Titania, S. A. Rio Bravo 1, Rio Bravo, Reynosa Mun., Tamaulipas state	sw	580

*Failures; †Junked; ¶Million cu. ft. gas.

Fitts Is Extended

HUNTON LIME TEST OFFSETS UNDEVELOPED ACREAGE

WEEKLY STAFF REPORT

Tulsa.—Activity in the Fitts area continued to hold high place in Oklahoma oil development. The producing limit of the field was pushed northward by completion of E. H. Moore's Sadler 1, SW NW SE 23-2n-7e, which found saturated Hunton lime from 3626 to 3660 feet. The field also had its usual share of producing completions and led the state in locations staked.

In Lincoln County a second test was announced for the area north of Wellston, where Summitt Drilling Company and Tom D. Phillips completed a producer last week in Eakers 1, NEC SW 35-12n-2e. Sun Oil Company will drill Arinwine 1, NE SE SE 35-15-2e. Also in Lincoln County Skelly Oil Company recovered two small saturated cores from Spears 1, C SE NE 20-17n-3e.

Deepen Yarhola Well

The discovery well of the Yarhola pool, Yarhola 1 NWc 36-10n-73, Seminole County, was deepened by Amerada Petroleum Corporation and Stanolind Oil & Gas Company. From new depth of 3647 feet the well flowed 1175 barrels in 24 hours. It is the only well of the pool.

With the second snow of the winter melting off, Oklahoma drilling crews somewhat caught up with work, as they completed 61 wells, against 41 for the previous week. The completions included 40 oil wells with total initial production of 44,647 barrels of oil. There were six gas wells, 13 dry holes and two abandoned locations on the list.

New wells starting, however, continued at a reduced number, 47 for the week with 45 for last week. The locations were divided as follows: Pontotoc County, 10; Creek County, six; five each for Oklahoma and Seminole Counties; three each for Okfuskee and Stephens Counties; Carter, Hughes and Pawnee counties, two each; Caddo, Coal, Logan, Marshall, and Pottawatomie counties had one each.

Offset Undeveloped Acreage

E. H. Moore, Inc.'s Sadler 1, SW NW SE 23-2n-7e, pushed the northeast extension of the Fitts field a little closer to the town of Stonewall last week with it found saturated Hunton lime between 3626 and 3660 feet, the total depth. The well was shut down to run seven-inch casing at 3624 feet, where a test will be made as soon as cement has set. Sadler 1 is due north of Moore's Deaner 1, which came in to produce 2404 barrels of oil a day recently. It is also an offset to undeveloped tracts belonging to Phillips Petroleum Company, and Skelly Oil Company, and is a south offset to a tract held by the Minnehoma Oil & Gas Company.

Despite the fact that Carter Oil Company's Warne 1, NEc NW 31-3n-9e, north of Centrahoma in Coal County, was dry and abandoned last week, the company made preparations for another try for production in the area by staking location for O. J. Hamilton 1, Section 33-4n-9e, Hughes County, two locations east and one mile north of the duster. Warne 1 was started in July, 1936, and considerable care was exercised in drilling so as not to pass any possible producing formation. Between 5556 and 5560 feet, a small show of oil was found, but when the well was bailed to the bottom it was found dry. The hole was later plugged back to 5450 feet. Total depth in Warne 1 was 5935 feet.

Another dry hole for Coal County was Continental Oil Company's Daniels 1, SW NE SW 27-1n-9e, west of Coalgate. The well topped the Wilcox sand at 7161 feet and drilled to 7197 feet where it was given a survey and showed salt water.

Many Wells Take Potentials

A host of potentials and early flows were reported from the Fitts field of Pontotoc County. E. H. Moore's Akers 10, SW NW NE 36-2n-7e, completed last week, was given a 24-hour potential of 4832 barrels of oil. Production was from the Hunton lime at 3755 feet.

Magnolia Petroleum Company's Simpson 14, SEc NE 29-2n-7e, received a 24-hour potential of 1262 barrels of oil, producing from 3654 feet following acidization with 10,000 gallons. The same company's Moran 1, SE NE SE 20-2n-7e, was drilled to 4384 feet in the Viola lime and then plugged back to 4368 feet where it was acidized with 10,000 gallons. If flowed 52 barrels of oil the first hour through casing and 36 barrels the first hour through tubing. The crew pulled tubing and the well flowed 270 barrels of oil the first hour through casing with no water showing. It was shut in to take potential.

Blackstock Oil Company's Kirby 2-A, NW NE SE 22-2n-7e, topped the Hun-

Another Gusher

WELL IN MOORE FIELD FLOWS 24,610 BARRELS POTENTIAL

Oklahoma City.—This sector of the Sooner state spent another quiet week, with most interesting news coming from Cleveland County, a report showing the first gusher producer for the state in 1937 to be located there. In Oklahoma City, a four-block extension of the Fair Park area was expected momentarily.

The new gusher was Sinclair Prairie Oil Company's Marvel 2, NWc NE 21-10n-2w, in the Moore pool of Cleveland County. The well received a 24-hour potential of 24,610 barrels of oil. The well had the second Wilcox sand from 7252 to 7270 feet.

May Extend City Area

A four-block extension was indicated for the Fair Park area at Oklahoma City last week as Champlin Refining Company's Cato 1, near Northeast Eighth street and Eastern avenue drilled below 6200 feet and had a flow of gas. The company was withholding information. Completion of Cato 1, would open considerable territory to drilling on the east side of the pool, and would assure more development in the Fair Park area.

A new potential was under way at Mid-Continent Petroleum Corporation's Campbell 5, NE SW NE 33-17n-4w, in the Crescent pool of Logan County. The well was shot with 96 quarts after drilling to 6288 feet in the Wilcox sand, and flowed 385 barrels of oil the first hour, 279 barrels the second hour and 279 barrels the third hour.

The Texas Company was continuing to bail shows of oil and gas early last week at State 1, SEc NE 36-14n-4w, in the Edmond pool of Oklahoma County. Fluid was lowered in the well 4700 feet, but it refused to clean out. It is bottomed at 6704 feet in the Wilcox sand.

Ohio Oil Company's Keifer 1, NW NE NW 5-13n-3w, was bailing at 3400 feet after a slight show of oil and gas.

Amerada Petroleum Corporation's Denny 3, NW SE SE 33-17n-4w, in the Crescent pool of Logan County, was to be plugged back for a retest of the first sand. Top of the second Wilcox sand was found at 6315 feet and after drilling ahead to 6399 feet, salt water was found in the hole.

Sinclair Prairie Oil Company's Shaffer 2, SEc SW 28-17n-4w, had the Wilcox sand at 6490 feet and drilled ahead to 6515 feet where it was bailing and making head flows with very little gas.

ton lime at 3610 feet; topped Viola lime at 4130 feet and ran seven-inch casing to 4170 feet. The casing was perforated on a level with the Hunton lime, and after being acidized first with 10,000 gallons and later with 2000 gallons, the well flowed 121 barrels of oil the first hour, 62 barrels the second hour, 39 barrels the third hour and 32 barrels the fourth hour. Following a third acid treatment with 3000 gallons, the well flowed 576 barrels of oil in three hours through casing. It will be given another acid treatment before completion.

The same company was testing Moody 6, SW NW SW 23-2n-7e, earlier in the week. The well had the Viola lime from 4110 to 4150 feet and was acidized twice, the first time with 5000 gallons and with 10,000 gallons the second time. The well then flowed 122 barrels of oil the first hour, 89 the second hour, 46 the third hour and 29 barrels the fourth hour. It later made a potential of 571 barrels of oil with no gas. Production was from 4380 feet in the lime.

Skelly Oil Company's Metropolitan Life Insurance Company 5, SW NE SW 23-2n-7e, is reported as the second largest Hunton lime producer in the field today. It found the Viola lime between 3606 and 4003 feet and the Sylvan shale from 4003 to 4007 feet. Following acidization with 10,000 gallons, the well established a 24-hour potential of 6114 barrels of oil. The flow, coming through tubing, was reported as being steady, and was accompanied by 1,750,000 cubic feet of gas.

Minnehoma Oil & Gas Company's Masters 2, NEc SE 23-2n-7e, which produced 6275 barrels of oil a day, and extended the Hunton lime zone of the field to the northeast, remains the largest Hunton lime producer. It made an estimated flow of 60 barrels of oil an hour, with production coming from the Hunton lime at 3855 feet. During a later test, the well flowed 349 barrels of oil in eight hours.

Skelly Oil Company's Ingram 1, NWc SW 23-2n-7e, at a plug-back depth of 3860 feet, was acidized with 5000 gallons and flowed 395 barrels of oil in six hours through tubing. It was shut in to take potential. The same company's Metropolitan Life Insurance Company 7, SW SE SW 23-2n-7e, received a potential of 4772 barrels of oil from the Hunton lime at 3867 feet.

Mid-Continent Petroleum Corporation's McKoy 5, SE SW SE 20-2n-7e, drilled to 4235 feet and swabbed 40 barrels of oil. Amerada Petroleum Corporation's Wooley 4, NE SE SE 21-2n-7e, topped the Hunton lime at 3514 feet and drilled ahead to 3863 feet where it made 5133 barrels of oil and had 4,500,000 cubic feet of gas on a 24-hour gauge. The flow followed acid treatment.

J. E. Crosbie's Burris-Smith 2, CW½ W½ SE 22-2n-7e, drilled to 4360 feet in the Viola lime and was acidized with 10,000 gallons. Prior to acid treatment, the well made 450 barrels of oil, and following acidization, made 127 barrels the first hour, 48 barrels the second hour and 48 barrels the following 30 minutes. It was shut in to take potential.

Carter Oil Company's Harden 4, NW NE NE 30-2n-7e, had a potential of 899 barrels of oil from between 4343 and 4346 feet in the Bromide lime. The well was first acidized with 10,000 gallons and made 1,500,000 cubic feet of gas. It had a bottom hole pressure of 1380 pounds.

Skelly Oil Company's Metropolitan Life Insurance Company 6, SEc SW 23-2n-7e, topped the Hunton lime at 3625 feet and found a good show of oil at 3888 feet. Top of the Viola lime was found at 4012 feet and reports state the well was showing for oil at 4380 feet, the total depth. After running seven-inch casing to 4061 feet, it was acidized with 5000 gallons and will be tested after acid reaction.

A new location was made in the Fitts field by E. H. Moore, Inc. It is for Mack 2-A, SE NW SE 28-2n-7e. J. E. Crosbie's Harden 3-B, NEc 30-2n-7e, was given a potential of 112 barrels of oil from the Hunton lime. Stahl Petroleum Corporation completed Dennis 5-B, SE NW SW 21-2n-7e, making a potential of 4415 barrels of oil.

W. A. Delaney and Boettcher Oil & Gas Company's Alexander 2, SW NE SW 24-4n-7e, in the Steedman area of Pontotoc County, was plugged back from 3756 to 3720 feet, and shot with 10 quarts. The well responded with a gas flow amounting to 26,000,000 cubic feet of gas and had a rock pressure of 1420 pounds. It will be completed as a gasser with Boettcher Oil & Gas Company taking the production.

South of Ada, Ramsey Petroleum Corporation's Johnson 1, NW SW NE 9-3n-7e, near the east Ada district, swabbed four barrels of salt water per hour. It will plug back to the Hunton lime and perforate casing. The well was drilled to 2845 feet.

In the Jesse pool of Pontotoc County, Continental Oil Company's Sawyer 1, SE SW NW 7-1n-8e, the Coal County extension of the pool, set seven-inch casing at 2125 feet and drilled to 2145 feet in the Wapanucka lime where it had 10,000,000 cubic feet of gas and was shut in.

Lincoln County Test Shows

Skelly Oil Company's Spears 1, CSE NE 20-17n-3e, south of Perkins in Lincoln County, cored from 4637 to 4641 feet and recovered three and one-half feet of sand with a slight stain of oil. The well then drilled to 4644 feet and took a core between 4644 and 4653 feet. Recovery was eight and one-half feet of sand also stained with oil. It was drilled to 4655 feet for further testing.

The Sun Oil Company is to start drilling Arinwine 1, NE SE SE 35-15n-2e, in the new pool north of Wellston in Lincoln County. The pool was opened by Summit Drilling Company and Tom D. Phillips' Eakers 1, NEc SW 35-12n-2e.

Phillips Petroleum Company and Shell Petroleum Corporation's McCaughtry 4, SW NE NE 21-23n-2w, most recent completion in the Billings pool of northwestern Noble County, was given an official potential of 1452 barrels of oil a day. Production is from sand between 4261 and 4295 feet.

Seminole County was fairly active during the past week. Amerada Petroleum Corporation and Stanolind Oil & Gas Company's Yarhola 1, NWc 36-10n-7e, in the North Bethel pool, deepened from 3638 to 3647 feet and flowed 1175 barrels of oil in 24 hours. It is the discovery well of the field.

Wrightsman Oil Company's May 2, SWc 25-10n-7e, southwest of the Cromwell pool, was completed for 100 barrels of oil an hour through casing, and had 40 barrels of oil an hour through tubing.

Bierson Oil & Gas Company's Jones 2, NW NE NW 11-6n-7e, in the Sasakwa pool, flowed 100 barrels of oil in 24 hours following a 10-quart shot in the Earlsboro sand at 2423 feet.

Gulf Oil Corporation's Manuel 1, SW NW SE 35-11n-5e, in the North Earlsboro pool, was completed for 490 barrels of oil.

J. A. Chapman and E. B. McFarland's Yarbrough 5, SW SE NE 18-10n-9e, in the North Olympic pool of Okfuskee County, made eight barrels of oil and 54 barrels of water on pump after shooting the Sonora sand at 1881 feet. The same interests' Yarbrough 6, NW SW NE 18-10n-9e, drilled to 1882 feet in the Sonora sand and shot with 60 quarts, following which it flowed 175 barrels of oil in 24 hours.

Stanolind Oil & Gas Company's Bunner 2, SW SE NE 25-10n-8e, in the same pool, was running tubing after recovering the bailer. The hole was bottomed at 1825 feet in the Sonora sand. It flowed 35 barrels of oil in one head.

Test in Tillman

INTERESTING WILDCAT WITH ALL UPPER SHOWINGS

Ardmore.—Only spot news was available from Southern Oklahoma last week, with further plans announced for the interesting wildcat in Tillman County, revival of an old wildcat in Love County and the start of a pumping schedule for the latest well in the Tussy pool of Garvin County.

Indian Territory Illuminating Oil Company and Foster Minerals Corporation's Hatler 1, C SW NE 32-2s-17w, south of Frederick in Tillman County, started tests of all formations above the total depth of 5168 feet. A lime series was had between 4414 and 4525 feet, but it was decided to discontinue efforts to get production at that depth. The crew has been instructed to perforate casing, beginning at 4414 feet where seven-inch casing was set, and continuing up the hole. A show of oil and gas was had at 4235 feet where gray crystalline lime held the show, having 20 percent salt water.

In Love County, in the Leon sector, Helmerich & Payne announce that plans are being made to carry an old well down

another 1000 feet. It is Johnson 1, C SW SW 20-8s-2w, which was temporarily abandoned at 4009 feet in September, 1936. The well is just across the Red River from an active area in the Gainesville district, Cooke County, North Texas.

The new completion in the Tussy pool of Garvin County, Wrightsmith Oil Company's Yates 1, NWc SW 33-1n-3w, has been put on the pump. The well is reported making from 150 to 200 barrels of oil a day from the Tatums sand between 2560 and 2607 feet.

Carter Oil Company's Robertson 1, C SW SW 2-9n-25w, north of Erick in Beckham County, set pipe early in the week and started bailing at 3653 feet. Later reports from the area state the well was drilling ahead at 3684 feet in gray shale and lime.

Stephens County looks to be the hot-spot for wildcat drilling during 1937, with many tests scheduled to begin at an early date. Most of the tests are to be deep, and some 15 or 20 major companies and individuals are interested in the tests.

Some of the wells are in rank wildcat territory, while others are to be drilled in old producing sectors, in the hope of finding deeper production than has heretofore been encountered. Carter Oil Company and others have made location for Harley Community 1, C NE NE 24-2s-4w, to the southeast of the old Milroy field in the southeastern part of the county. The well has a contract depth of 8200 feet, and with tools being moved in, pits dug and cellar started, the test is due to start drilling not later than February 1. Others terested in the test included Skelly Oil Company, Magnolia Petroleum Company and Mudge Oil Company, all which have holdings under the lease. The location is about four miles west and one and one-fourth miles north of Carter Oil Company et al's Williams 1, in the old Fox field of Carter County, one of the most interesting tests ever drilled in the area. It is still producing from 8105 feet.

Location has been staked for a 5500-foot test in the southwest part of the county. It is Helmerich & Payne et al's Graham 1, SWc NE 12-1n-5w, and is to be started around February 1. Companies and individuals interested in this deal are Gulf Oil Corporation, Amerada Petroleum Corporation, Stanolind Oil & Gas Company, Minnehoma Oil & Gas Company, The Texas Company, Sun Oil Company, Pure Oil Company and Edwin B. Cox, Jake L. Hamon, R. L. Clark and J. B. Cowden.

In Section 17-3s-4w, three companies are working out details for a deep test in the south half of the section. If negotiations are completed successfully, the well will be drilled by Gulf Oil Corporation, Carter Oil Company and Shell Petroleum Corporation. It will be near the Carter County line.

Heenan & Coe, J. R. Travis and J. R. Palmer are planning a test to be carried down 4000 feet in SE SW NW 33-3n-7w, about three miles northeast of Coline Oil Company's Johnson 1, SW SE NE 1-2n-8w, near Marlow. The latter well recently completed running casing to a depth of 6500 feet.

Magnolia Petroleum Company's Gardner 1, NEc NW 34-6s-2e, in the Marietta area of Love County, is dry and abandoned. Operations were started at the well around October 6, 1936, and the well was carried ahead steadily until December 15 of the same year when trouble was encountered with drill pipe stuck in the hole at 2328 feet. Now it is chalked up with the long list of failures for the area at 3274 feet in the Viola lime.

Gardner 1 was a southeast diagonal offset to Amerada Petroleum Corporation and Stanolind Oil & Gas Company's Westheimer and Daube 1, SW SE SE 27-6s-2e, which went dead in August of last year after showing for a small producer from the Viola lime.

In Garvin County, Ellison & Hammond's Selby 1, CNW NW 24-2n-3w, near Foster, has been abandoned. Selby 1 was started at a much earlier date than Magnolia's try in Love County, operations starting August 19, 1936, and continuing until January 20, 1937, at which time operators were measuring the hole, at an estimated total depth of 6774 feet, to be marked dry

Interstate Taxes

MARLAND SUGGESTS STATES AGREE ON OIL TAX RATES

OKLAHOMA CITY.

WHEN E. W. MARLAND began his term of Oklahoma governor in 1935 the search for additional tax revenue turned immediately to the oil industry, which by inference threatened to move in part to Texas rather than submit to an abnormal tax program. This threat brought political guffaw, still the instances of Oklahoma oil concerns already having transferred headquarters to Texas were sufficient to leave the conviction that a distasteful tax program could bring further exodus.

This possibility may have had little bearing on the final result, but it was a fact that the petroleum industry drew no tax program similar to that indicated in the early month of 1935.

Later the Oklahoma governor was successful in bringing into existence the Oil States Compact Commission, a treat authorized by Congress, whereby oil producing states may send representatives into conferences to deal with problems of conservation and methods of production.

Wants Tax Harmony

When the second half of the Marland administration began, January 1, 1937, the industry had accepted it as fact that the Oklahoma governor was no longer interested in an increase of the gross production tax (five percent of the value of oil in lieu of an ad valorem tax) but along with the introduction of bills to raise this tax January 20 came a statement from the governor to the effect that he would suggest a conference between himself and other Oklahoma officials, the Texas governor and other Texas officials for the purpose of bringing the two states in harmony on a program of increasing gross production taxes. It smacks of the methods and knowledge gained from operation of the Interstate Oil Compact Commission in order to gain additional revenue and prevent the loading of vans with office furniture in Oklahoma with Texas points as their destination. Governor Marland said he would wait until after James V. Allred has the matter of a second inaugural out of the way before suggesting such a conference.

In explaining his change in attitude the Oklahoma governor was thus quoted in the daily press:

"I wouldn't approve an increase in Oklahoma until the tax is raised in Texas."

Along with the conference proposal the Oklahoma governor expressed dissatisfaction with the percentage tax program, instead he would put the tax rate back on the barrel basis. "What," he asked, "if the state is getting ten percent of the price of oil and the price drops to 50 cents a barrel? Any time the state raises the tax it had better get the tax in mind."

Without an increase in the gross production rate in Texas, however, the Oklahoma governor is wary of one for Oklahoma. "I've tried to make it clear," he explained, "that my opposition to an increased gross production tax was that it put our wildcatters and small producers at a disadvantage. A heavier tax would discourage wildcatting in Oklahoma in favor of Texas."

New Tax Proposed

That a tax increase in Oklahoma is something more than a political gesture became known last week when Charles Flanagan, Cotton County representative, introduced a measure to double the rate on Oklahoma gross production. His measure seeks 10 percent of the value.

A measure in harmony with the ideas of the governor has been promised by Clarence Tankersley, Shawnee, chairman of the oil and gas committee of the Oklahoma lower house. He gave out a statement to the effect that he will introduce a bill to make the gross production tax, nine cents a barrel. Five cents of this tax would go into the common school fund. The remainder would be impounded for a definite period and the funds invested in government securities. His object is to create a huge surplus against days of deficit.

Allen G. Nichols, state senator and a leader in that house, however, came out in opposition to any increase in the gross production tax. The situation in legislative circles is such that the administration is in the majority. This would indicate an increase in the Oklahoma tax, provided an increase comes about in Texas.

and abandoned. The well was bottomed in the Pennsylvania shale with no favorable showings, according to operators.

MOORE OIL LINE

Oklahoma City.—White Deer Pipe Line Construction Company has been awarded a contract for a 12-mile four-inch oil line by Anderson-Pritchard Oil Company. The line will be laid from a point near Moore in Cleveland County to Anderson Pritchard's booster station southeast of Oklahoma City, and will be acetylene welded.

Tulsa.—Skelly Oil Company has contracted with Truman-Smith Construction Company for the building of a 20-mile west extension to its six-inch line now terminating at Lorraine, Kansas. Forty-foot joints of seamless pipe will be acetylene welded.

OKLAHOMA

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CARTER COUNTY—		
Samedan Oil, Higgens "A" 2, sw sw ne 7-2s-2w (otd 1840)	65	2551
Jones Oil, Dillard 1, sw se ne 22-4s-2w (otd 1500)	15	2685
Carter Oil, Ward 38, nw ne nw 6-4s-3w	45	1187
CREEK COUNTY—		
Strozier, Gidney 1, nw nw se 12-16n-11e	¶2	1625
R. F. Harmon, Bryden 1-A, ne nw ne 17-14n-8e	*	1105
Sinclair Prairie, Slick 6, sw sw sw 3-17n-7e (otd 2690)	25	2727
Big Four Pet., Moore 1, se se ne 4-18n-8e	*	2856
Johnson Oil Ref., Flincher 3, sw ne sw 11-19n-9e	4	2152
GARVIN COUNTY—		
Cox & Hammon, Davis 1, se ne se 32-1n-3w	60	2730
GRADY COUNTY—		
Carter Oil, White Eagle 2, se nw sw 27-3n-5w	30	2506
HUGHES COUNTY—		
R. K. Ellison, Peters 1, se nw se 8-6n-10e	*	4301
KAY COUNTY—		
Ben Head et al, Belveal 1, sw sw sw 8-25n-1w	lcn	abd.
LINCOLN COUNTY—		
Wilcox O & G, DeLossier 3, ne ne sw 15-14n-6e	15	2988
OKFUSKEE COUNTY—		
Kasahoma Oil, Scott 4, ne se nw 23-12n-14e	*	1950
Blackwell, Dolton 13, nw sw ne 36-10n-8e	380	1742
Dolton 14, sw sw ne 36-10n-8e	225	1745
Evans & Morris et al, Lively 2, ne se nw 36-10n-8e	480	1746
Manahan Oil, Dolton 14, ne nw se 36-10n-8e	387	1744
Arkansas Royalty, Fisher 4, ne nw se 18-10n-9e	140	1917
Grimes, Wind 5, sw se ne 35-11n-9e.	12	1500
OKLAHOMA COUNTY—		
Jones, Shelborne & Hodges, McKeever 1, se ne sw 15-12n-3w.	¶3 441	6485
British-American Oil, Wilkinson 1, se sw sw 23-12n-3w	541	6494
Big Chief Oil, State Hospital 1, sw ne se 27-12n-3w	¶10½ 8499	6510
OKMULGEE COUNTY—		
Eagle Picher, H. Henry 2, nw nw se 27-12n-12e	¶1½	2154
OSAGE COUNTY—		
Pure Oil, 148, cs½ ne 5-23n-8e (otd 1308)	505	2115
Barnsdall Oil, 13, sw sw sw 17-23n-12e	20	1653
Lewis & Texas Co., 7, se se se 17-24n-7e	143	2678
Lewis Prod. 4, ne ne ne 20-24n-7e	220	2695
Mead Prod., 5, ne nw ne 22-24n-8e.	*	2352
Carter Oil, M. J. Cook 7, se nw ne 9-25n-6e (pb 2713)	425	2716

Wildcat Produces

OPEN NEW FIELD IN STAFFORD COUNTY; WELLINGTON EXTENDED

WEEKLY STAFF REPORT

Wichita.—One new pool and extension of another were the foremost contributions of drilling in Kansas last week. Stafford County drew the new pool, when Skelly Oil Company found the Lansing lime productive in Kipp 1, SEc NE 27-25s-14w. The extension was to the Wellington pool, Sumner County, by Vickers Petroleum Company, Markley 1-B, SEc SW 32-31s-14w, a chat well, total depth 3668 feet.

Kansas completions for the week totaled 34 of which 26 were oil wells, one gas well and seven dry holes. The state had 31 completions the previous week. New starts also numbered 34, the total for the week previous. Of these locations Reno County drew five, Rice and Woodson Counties four each; Barton and McPherson Counties three each, Ellis, Harvey, Russell and Sumner Counties two each and one each for Butler, Cowley, Greenwood, Kingman, Marion, Rooks and Rush Counties.

Company, Well and Location	Init. Prod. Bbls.	Depth
PAWNEE COUNTY—		
Bay Oil, Beetho 1, cs½ se se 14-20n-7e	*	3114
R. Davis, Davis 4, sw nw nw 21-21n-8e (otd 700) (pb 1212)	4	1447
PAYNE COUNTY—		
Chamberlin et al, Taylor 1-A, se ne se 22-18n-3e	*	1744
Home Gas, Coy 1, sw se nw 34-18n-5e	lcn	abd.
PONTOTOC COUNTY—		
Continental Oil, A. Thompson 1, sw nw se 2-1n-7e	¶3 3358	4541
Magnolia, Shaffer 6, nw se nw 25-2n-6e (pb 4350)	6240	4400
Moore, C. C. Walker 1, nw nw nw 8-2n-7e (pb 420)	*	441
Magnolia, Metropolitan Life 29, nw sw se 22-2n-7e	¶3 3166	3916
Moore, Moody 5-A, se ne se 22-2n 7e	¶3 4406	3983
Sinclair Prairie, Wooley "B" 10, nw se sw 22-2n-7e	3006	4390
Simpson, Westheimer 5-A, nw sw nw 26-2n-7e	¶5 5154	3658
Blackstock, Moody 1-B, ne ne ne 27-2n-7e	¶3½	1190
Carter Oil, G. Smith 10, ne nw sw 28-2n-7e	2266	3546
Moore, McKoy 8-A, se sw sw 28-2n-7e	¶1½ 1361	4330
Carter Oil, Hardin 12, se se sw 30-2n-7e	¶4½ 2279	4347
Benedum & Trees, Jacobs 1, ne sw sw 28-5n-5e (otd 2365)	9	2515
POTTAWATOMIE COUNTY—		
I.T.I.O., Weldfelt 1, ne ne nw 2-7n-4e	57	4207
Atlantic Oil, Standridge 1, se sw sw 10-7n-4e	¶1½	4020
Magnolia, Green 2, se sw nw 13-7n-4e (pb 4180)	200	4235
Pure Oil, Lattimer 1, ne nw nw 21-7n-4e (pb 3540)	92	3864
SEMINOLE COUNTY—		
Kimsey, Spalding 1-A, se nw ne 6-7n-7e	*	2082
Winona Oil, Dindy 1, se sw sw 6-7n-8e (pb 3234)	*	3450
Empire, Campbell 2, ne sw sw 20-7n-8e	24	2868
Prounty, Boring 5, nw nw se 17-9n-7e (pb 3451)	54	3458
Carter Oil et al, Aldridge 6, cn½ ne nw 35-11n-6e	284	4169
STEPHENS COUNTY—		
Ed Parson, Olson 1, csw sw 21-2n-8w	*	7000
George Pace, Branch 1, nw sw ne 12-2s-8w	*	2633
Mudge Oil, Robinson 9, se sw sw 10-3s-5w	¶¼	425
TULSA COUNTY—		
Sheldon, Teter 1, cnl ne nw 13-18n-12e (otd 1840)	10	2019
Bu-vi-bar Oil, Thatcher 3, cnl se ne 27-18n-13e	*	904
Swift Bros., Tidewater 2, cel ne se 14-19n-10e (pb 2130)	¶4½	2478

*Failures; †Junked; ¶Million cu. ft. gas.

Southwest of St. John

Skelly Oil Company's Kipp 1, SEc NE 27-25s-14w, southwest of St. John, Stafford County, made 860 barrels of oil during the first 16 hours of a potential test. Kipp 1 topped the Lansing lime at 3682 feet and was acidized with 3000 gallons at a total depth of 3906 feet. Following acidization, the well flowed 1265 barrels of 33 gravity oil in 24 hours. The flow was through tubing at the rate of 50 barrels of oil per hour.

Kipp 1 is on a block of 43 quarter-sections, and is operated by Skelly, which holds 48 per cent interest. The Texas Company has 48 percent interest, and the remainder by the Piney Oil Company.

Wellington Is Extended

Vickers Petroleum Company's Markley 1-B, SEc SW 32-31s-1w, has extended the Wellington pool of Sumner County one-half mile to the west. The well had the chat from 3666 to 3668 feet, and after running seven-inch casing and rigging up standard tools, the well was drilled in. It filled with oil in three hours and later flowed 100 barrels of oil in one hour and 30 minutes from a total depth of 3696 feet. It has been shut in for tankage. Two offset wells will be forced by the new producer. These will be Stanolind Oil & Gas Company's W. S. Nelson 1, NEc NW 5-32s-1w, and The Texas Company's J. C. McKee 1, NWc NE 5-32s-1w.

Magnolia Petroleum Company's Roetzel 2, NEc 24-20s-11w, on the east side of the Peter pool of Barton County, was completed for 1197 barrels of oil natural. at 3261 feet. In the same area, at the northeast part of the pool, Gulf Oil Corporation's Mary Myers 1 pumped 167 barrels of oil in 11 hours from the Siliceous lime at 3311 feet, following acid treatment with 1000 gallons. It was later reacidized with 2000 gallons.

Barton Wildcat Showing

Herndon Drilling Company's Arnold 1, NEc 30-18s-15w, northwest of Albert in Barton County, topped the Reagan sand at 3497 feet and recovered a core saturated with oil from between 3521 and

3529 feet. Casing was being run preparatory to drilling in. Helmerich & Payne's Krause 1, C SE 18-18s-15w, one and one-half miles to the northeast of Arnold 1, picked up a good showing of gas at 3513 feet in the sand. Casing is being run before drilling deeper.

Morgan & Flynn's Brack 2, C SW 21-18s-15w, ran eight-inch casing to 3225 feet to kill a gas flow estimated at 8,000,000 cubic feet. Operators were preparing to drill ahead.

Indian Territory Illuminating Oil Company's Schrepel 1, SEc NE 26-20s-11w, southeast of Ellinwood in Barton County, was having considerable fishing trouble. It is south of production in the Peter pool.

The name Schoenfeld has been suggested to the Kansas nomenclature committee for the new area recently opened in Rush County by Schoenfeld and Kitch's Winget 1, SEc 15-16s-16w, 10 miles northwest of the Otis gas pool. Location has been made for Winget 2, SWc 4-16s-16w as an east offset to the discovery well, while The Texas Company has made location for Wagner 1, NWc 22-16s-16w, a south offset.

Empire Oil & Refining Company's Talbot 1-B, CWL NW NW 1-23s-2w, at the north end of the Warkentine pool in Harvey County, was reported showing for 175 barrels of oil per hour from the chat between 2958 and 2980 feet. The same interests' Talbot 2-A, CEL SW NW 1-23s-2w, was a location.

Palmer Oil Company's Harvey 1-B, CWL NW SW 1-23s-2w, had the chat at 2967 feet, found some water in the hole, and drilling ahead, found the Hunton lime at 3292 feet. Six-inch casing was set at 3404 feet and a showing of oil was had from 2415 to 3430 feet.

National Refining Company's Reamy 18, CNL NE 20-21s-4e, east of Peabody in Marion County, made 157 barrels of oil the first 24 hours and the following 24 hours made 157 barrels of oil. Production was from the Kansas City lime following acidization. One location to the west, Reamy 19 pumped 325 barrels of oil the first 24 hours and 512 barrels the second 24 hours, following acidization. It was also producing from the Kansas City lime. Location has been staked for Reamy 20, SWc SE 17-21s-4e, a north offset to Reamy 19.

Champlin Oil & Refining Company's Myers 1, SWc 36-11s-18w, one-half mile south of the discovery well in the Marshall Ranch pool of Ellis County, pumped 20 barrels of oil an hour for five hours from the Siliceous lime at 3625 feet before the rods parted.

Jones Brothers Drilling Company et al's Phillip 1, SEc SW 9-15s-17w, southeast of Hays in Ellis County, picked up a small showing of oil from 3532 feet in the top of the Siliceous lime to 3536 feet, but had eight bailers of water an hour from 3548 feet, the total depth. It was shut down for orders but will probably be abandoned.

New Cowley Field

Sinclair Prairie Oil Company's Dettmer 12, SE NW SW 24-32s-4e, in the State pool, east of Winfield in Cowley County, had the Bartlesville sand at 2949 feet and shot at 3025 feet with 120 quarts. Following the shot, the hole filled 700 feet with oil.

What is thought to be a new pool for the county was opened last week when W. M. McKnab et al's Charles 1, NEc SE 20-32s-5e, east of Winfield, came to produce 187 barrels of oil from the Bartlesville sand at 3097½ feet. Gulf Oil Corporation, which supported drilling of Charles 1, announced location for Cairns 1, NWc SW 21-32s-5e, as an east offset to the new producer. Rig was being built for the test which will be carried down with standard tools.

Phillips Petroleum Company's Hoffman 1, SEc 31-15s-13w, in the Trapp pool of Russell County, pumped 2580 barrels of oil in 24 hours from the Siliceous lime at 3240 feet, following acid treatment.

Empire Oil & Refining Company's Strecker 1, NWc NE 35-14s-14w, in the Gurney South pool of Russell County, filled 1080 feet with oil in one hour after drilling into the pay zone of the granite wash at 3192 feet.

Indian Territory Illuminating Oil Company's Fossey 1, SWc NE 31-20s-10w, southwest of Raymond in Rice County, topped the Kansas City lime at 3035 feet and had a showing of oil. It is drilling ahead below 3285 feet.

Murphy & Witt's Wright 1, SE NE NE 9-23s-8w, southeast of Nickerson in Reno County, topped the Siliceous lime at 4040 feet and drilled to 4090 feet with no sign of saturation. It is to be abandoned. Shell Petroleum Corporation's Whipple 3, NWc 14-26s-9w, in the Lerado gusher pool, was completed for 3759 barrels of oil from the Viola lime at 4127 feet following acidization.

The Siliceous lime will be the object of a wildcat test starting in the new Wellington area of Sumner County, southern Kansas. It is Patten Drilling Company, Chester Westfall and F. M. Fine's Paesel 4, SW NW SW 35-31s-2w. Six major companies are supporting the venture, and include, the Carter Oil Company, Continental Oil Company, Sinclair Prairie Oil Company, Deep Rock Oil Corporation, Darby Petroleum Corporation, and Skelly Oil Company. The well must be spudded by February 15.

In the Coralena pool of Russell County, W. I. Southern's Meharg 1, NEc 18-15s-13w, drilled to 2988 feet in the Kansas City lime and had 1800 feet of oil standing in the hole.

Helmerich & Payne's Verhage 1, C SE SE 2-7s-11w, three miles southeast of Downs in Osborne County, in rank wildcat territory, was dry and abandoned at 4110 feet in the Siliceous lime. Top of the formation was found at 3930 feet.

Kuhn Brothers and Helmerich & Payne's Meredith 1, C SW 10-30s-33w, east of Satanta in Haskell County, is reported to have found 3,000,000 cubic feet of gas from a sand at 2800 feet. It is at the eastern edge of the Hugoton gas field.

LEASE SALE

Muskogee.—Oklahoma oil operators purchased 77 of the 102 tracts of restricted allotted Indian lands offered for sale here at public auction January 28, paying a total of $25,663.78 for the land. Highest price in the sale was paid by J. K. McKoy for 3.15 acres in N½ SW NW 23-2n-7e, one of the most active sectors in the Fitts field of Pontotoc County, for $1000 an acre. In Section 22-2n-7e, the adjoining tract, N½ NE SE brought $1175 an acre. Attendance at the sale was said to have been better than has been noticed in some time.

Hutchinson, Kan.—Western Kansas oil operators met in the Bisonte Hotel here January 28, and held a discussion of Kansas taxation matters and national legislation affecting the oil industry introduced into Congress at this session. Speakers included W. D. P. Carey of Hutchinson, who spoke on the proposed increase of taxation on the petroleum industry in Kansas, and Harold B. Fell, executive vice president of the Independent Petroleum Association of America, from Ardmore, who spoke on national legislation.

KANSAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BARBER COUNTY—		
Barber Oil, Magnison 1, cne nw 14-33s-13w	¶7	4554
BARTON COUNTY—		
Torry & Feaster et al, Feist 1, ne ne se 29-18s-11w (otd 3434)	282	3443
Stanolind, H. C. Burmeister 1, ne ne ne 35-19s-11w (pb 3317)	*	3345
BUTLER COUNTY—		
Wixon et al, Coulter 1, nw sw ne 3-27s-7e	*	3008
CHAUTAUQUA COUNTY—		
Morrow & Sons, Floyd 1, cne nw 31-32s-11e	4	2022
Sagamore Oil, Wilson 9-A, se nw ne 14-33s-12e	18	1779
Sagamore Oil, Wilson 10-A, se sw ne 14-33s-12e	20	1874
COFFEY COUNTY—		
Harrigan Bros., Wiley 2, se ne ne 14-23s-14e	70	1615
Schafer & Howell, Tebbens 3, cnw nw 18-23s-15e	60	1641
ELLIS COUNTY—		
Ryan Consolidated, Bemis 2, sw sw nw 22-11s-17w	1844	3387
Twin Drlg., Goetz 1, sw sw se 3-14s-17w (otd 3303)	653	3568
ELLSWORTH COUNTY—		
Carter Oil et al, Elizabeth 1, ne ne ne 34-17s-9w	1147	3186
MARION COUNTY—		
H. C. Strom, Schlennor 1, se se sw 15-17s-4e	15	2422
McPHERSON COUNTY—		
McBride, Whitwright 6, se ne sw 30-19s-1w	273	2982
Lario et al, Lagree 4, ne ne nw 31-19s-1w	196	2968
OSBORNE COUNTY—		
Helmerich & Payne, Hittinger 1, cse se 2-7s-11w	*	4110
RENO COUNTY—		
Wilcox O & G, Neufeldt "A" 1, nw se nw 12-23s-4w	832	3484
Skelly et al, Chesshire 3, sw nw se 3-24s-4w	649	3373
Shell, Seedle 4, nw sw nw 16-24s-4w	582	3366
RICE COUNTY—		
Bradley Oil, Mitchell 3, se sw sw 32-19s-10w	2115	3299
Gulf Oil, Stolz Jr 5, se sw nw 5-20s-10w	1427	3314
Stanolind, Specht 10, se ne se 6-20s-10w	2363	3328
El Dorado Ref, Gossman 1, sw se sw 5-21s-7w	60	3382
L. E. Douglass, Patton "B" 1, ne ne ne 7-21s-7w	656	3357
Derby Oil, Thode 5, sw sw se 8-21s 7w (pb 3380)	1152	3396
RUSH COUNTY—		
Schoenfeld & Kitch, Wingit 1, se se se 15-16s-16w	797	3247
Gratton et al, Maresch 1, cnw nw 28-19s-19w	*	4225
RUSSELL COUNTY—		
Empire, Crawford 10, ne nw sw 2-14s-15w	728	3308
Empire, Frecerick 1, se se se 18-15s-11w	*	3401
Coralena Oil, Trapp 16, se nw se 30-15s-13w	2653	3257
W. I. Southern Inc, Sellens "A" 3, se ne sw 30-15s-13w	2232	3270
SALINE COUNTY—		
James Brouk et al, Tehlander 1, ne nw se 10-16s-3w	*	3320
STAFFORD COUNTY—		
Lebow et al, Wolf 1, se sw nw 3-21s-12w	*	3582
WOODSON COUNTY—		
Sheedy et al, Lee 3, sw sw ne 28-25s-14e	240	1469

*Failures; †Junked; ¶Million cu. ft. gas.

Cooper Comeback

RENEWS POPULARITY BID WITH TWO GOOD WELLS

WEEKLY STAFF REPORT

Hobbs, N. M.—The Cooper field registered a dual bid to regain its lost prestige as a popular drilling center in Lea County through completion of two prolific oil wells the past week. The county added 16 new locations and 10 completions, including two wildcat failures, during this period.

Sam C. Yingling et al's Dan Vaughan-Conoco 1-A, C SE NW 3-24s-36e, advanced oil production in the Cooper field ¼-mile north, with a natural flow of 100 barrels of oil per hour through open 2½-inch tubing from dolomite lime at 3576 feet, or 165 feet below sea level. The same group also completed Vaughan-Conoco 1-B, NE NE NE 9-24s-36e, flowing 50 barrels of oil per hour through ¾-inch tubing choke, with gas volume rated at 1,000,000 feet daily. The latter was drilled to 3686 feet, or 184 feet sub-sea. It is offset by production to the north and east. Shell Petroleum Corporation's W. B. Guthrie 1, C SW SE 34-23s-36e, situated ½-mile north and ¼-mile east of Vaughan-Conoco 1-A, missed the oil zone in drilling to sulphur water at 3918-3928 feet, with an elevation of 3381 feet, and has been plugged back to 3780 feet to complete as a gasser. The Cooper field has a maximum width of 1½ miles and has received very little attention within the past year because of rapid intrusion of sulphur water in new completions, regardless of their structural position.

Wildcat Showing

Magnolia Petroleum Company's State 1-G, NW NW NE 24-17s-24e, located ¾-mile southeast of its State-Bridges 1, isolated wildcat flowing well, developed 700 feet of oil in hole when deepened with cable tools to 4477 feet. Seven-inch pipe was cemented at 4418 feet after the hole filled 200 feet with oil when first saturated lime zone was encountered at 4451 feet, with an elevation of 4019 feet. This new prospective producer logged top of lime at 4378 feet, or 359 feet sub-sea, and is checking about 11 feet higher structurally than the discovery well as result of slight thinning of formations below the top of the salt series.

Rushwold Oil Company, Dallas, and Continental Oil Company et al's E. E. Carter 1, C NW NE 30-20s-39e, located on a wildcat block about 8½ miles southeast of the Hobbs field and near the Texas border, was abandoned at 4711 feet early last week. Trace of oil logged at intervals below 4500 feet did not warrant testing, according to owners. Base of salt was logged at 2805 feet, with an elevation of 3559 feet. Jim Brown and Reynolds' Parcell-Conoco 1, C NW SE 8-21s-38e, seeking production on a separate block about 3¾ miles to the south of the above failure, was drilling hard lime at 3933 feet, according to late reports. Dry gas production at 3160 feet, with an elevation of 3573 feet, is considered a good omen for this prospect, which is being drilled with cable tools. Shell Petroleum Corporation's State 1-T, C SE NE 34-20s-35e, located 7½ miles west of the north end of the Eunice lime field, tested sulphur water when formation tester was used in lime at 4045-4195 feet, with an elevation of 3719 feet. Plugging orders followed.

Monument Completions

Late completions in the Monument field included Repollo Oil Company's Barber 4, NE NW NW 8-20s-37e, flowing 241 barrels of oil in 6 hours through ¾-inch tubing choke, with 350 pounds back pressure. It was completed at 3885 feet. The company has started work on Barber 5, SE SE SE 7-20s-37e, and Barber 6, SW NE SE 7-20s-37e. Elmer Boeseke et al's Wulff 1, NW NW NW 17-20s-37e, tested 68 barrels of oil in 10 minutes through 4-inch line on casing, with the well bottomed at 3855 feet, or 307 feet sub-sea. Phillips Petroleum Company's Mexico 1, NE NE NE 18-20s-37e, is starting up as a west offset. Continental Oil Company et al began operations on the following new tests: A. U. Sanderson 3-A-11, C SE SE 11-20s-36e; H. M. Britt 2-B-18, C SE NW 18-20s-37e; and Britt 3-B-18, C NW SE 18-20s-37e.

Amerada Petroleum Corporation's D. F. Larsen 1, C SE NW 32-19s-37e, near Monument townsite, flowed 30 barrels of oil per hour through 1-inch choke after using 2000 gallons of acid at 3915 feet. General Crude Oil Company and Magnolia Petroleum Company, 50-50 owners of a large number of leases in Lea County, have started operations on State 1-G, C NW NW 16-20s-37e, offsetting a drilling test. Humble Oil & Refining Company has moved in rotary to drill M. E. Laughlin 3, C SE SW 4-20s-37e. The Texas Company's State 2-J, C SE SW 24-19s-36e, is a late location for the northwest edge of the Monument field, where marginal wells predominate.

North Eunice Producer

Continental Oil Company's M. E. Wantz 1, C SW SW 21-21s-37e, proved one of the best natural producers for the North Eunice sandy-lime field, with an initial gauge of 48 barrels oil in 16 hours through 11/64-inch choke. The well was drilled to 3815 feet, with an elevation of 3499 feet. This company has rigged up to drill J. M. Skaggs 1, C NE SE 24-20s-37e, located on a north strike from the above area and about 3½ miles east of nearest production at Monument. However, it is only 1⅞ miles northeast of a gasser. In the South Eunice sandy-lime area, Skelly Oil Company has moved in rotary to drill Ellen Sims 2, C SW NE 3-23s-37e. Repollo Oil Company has made location for Fowler Hair 1, NW NW NW 9-24s-37e, and The Texas Company is starting work on Jas. F. Black 2, C NE SW 21-24s-37e.

Trio of new tests for the Eunice field were distributed near the edges of the producing area. Jim Murray et al's State-Wallace 1, C Lot 5, 3-21s-36e, offsets production on the east. Repollo Oil Company made location for State 2-196, SW NW SW 32-20s-37e, and Shell Petroleum Corporation is defending its line on the east in drilling State 1-M, C Lot 8, 1-21s-35e.

In southern Roosevelt County, Joe C. Maxwell, R. Crandall and C. H. Osmond's A. B. Williamson 1, C NW NW 7-8s-36e, failed to improve beyond a small show of black oil when shot with 340 quarts of nitro at 4687-4802 feet, with an elevation of 4149 feet, and the test has been abandoned. It was plugged back from sulphur water at 4827 feet to 4814 feet.

NEW MEXICO Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
LEA COUNTY (Cooper Field)—		
Sam C. Yingling et al, Dan Vaughan-Conoco 1-A, C SE NW 3-24s-36e	2500	3576
Dan Vaughan-Conoco 1-B, NE NE NE 9-24s-36e	2500	3686
LEA COUNTY (Eunice Field)—		
Gulf Oil Corp., State-Sunshine 2, C SE SW 30-20s-37e	720	3840
LEA COUNTY (South Eunice Field)—		
Skelly Oil Co., J. V. Baker 3, C NE NW 27-22s-37e	150	3600
LEA COUNTY (North Eunice Field)—		
Magnolia, E. O. Carson 3, C SW SW 28-21s-37e	80	3775
LEA COUNTY (Monument Field)—		
Amerada Pet. Corp., D. F. Larsen 1, CSE NW 32-19s-37e	1500	3915
Gulf Oil Corp., State-Graham 1-G, C SW SE 17-19s-37e	700	3995
Repollo Oil Co., Barber 4, NE NW NW 8-20s-37e	3600	3885
LEA COUNTY (Wildcats)—		
Rushwold Oil Co.-Conoco, E. E. Carter 1, C NW NE 30-20s-39e	*	4711
Shell Pet. Corp, State 1-T, C SE NE 34-20s-35e	*	4195
ROOSEVELT COUNTY—		
Joe C. Maxwell, R. Crandall & C. H. Osmond, A. B. Williamson 1, C NW NW 7-8s-36e	*	4827

*Failures; †Junked; ¶Million cu. ft. gas.

CARBON BLACK PLANT

Shreveport.—Southern Carbon Company, represented by H. H. Reardon, has acquired a 40-acre site in the Rodessa field to erect a carbon black plant, according to reports. The site is adjacent to the K. C. & S. Railway right-of-way, and near Coltexo Gasoline Corporation's large natural gasoline plant on Standard Oil Company of Louisiana's Sexton lease.

Greater Activity

WINKLER, WARD AND ECTOR COUNTIES LEAD IN DRILLING

WEEKLY STAFF REPORT

Midland, Texas.—The Winkler-Ward County sandy-lime belt and the Goldsmith field, Ector County, are currently the most active drilling centers in West Texas. Field work throughout the district has been attaining higher levels each week since the turn of the new year, and in all probability will continue to gain until the saturation point is reached on available rotary rigs.

Yoakum County's single producing area retained its promising outlook for commercial production by completion of a second flowing well. Texas Pacific Coal & Oil Company's Ruth Bennett 1, C NE NW Section 678, Block D, ½-mile west of the discovery, gauged 572 barrels of 34 gravity oil after using 5000 gallons of acid in lime at 5183-5236 feet. The hole is bottomed at 1677 feet below sea level, while the discovery well is flowing from plugged-back depth of 5264 feet, or 1707 feet sub-sea. Oil yield of the second completion exceeds proration allowable in making tank-truck sales to a Lubbock refinery, and probably will not be drilled through the saturated lime zone and shot with nitro.

Terry County Failure

Terry County scored a failure the past week, and has a second prospect nearing a decisive level. Uscan Oil Company and Illinois Oil Company's Brownfield 1 was abandoned in lime at 5677 feet without reaching bottom-hole water. W. L. Pickens et al's Lewright 1, near the south line of the county, drilled to 4555 feet, and will change to standard tools before attempting to drill the main body of lime. In Hockley County, The Texas Company et al's Slaughter 1 halted drilling at 4070 feet to ream hole.

Sun Oil Company's W. P. Edwards 1, located ½-mile southeast of nearest production in the north extension of the Leck reef-type structure, Winkler County, flowed 11 barrels of oil by heads after washing hole in broken dolomite lime at 3133-3175 feet. This zone was due to be given a nitro shot late last week. Steep dip of the structure was recorded by this prospective producer, which was drilled to 254 feet sub-sea. Harry Adams, Bradley et al's W. P. Edwards-Shell 1, second producer for the area, gauged 735 barrels of oil and 4,500,000 feet of sulphur gas from lime at 2967-2998 feet. The latter is bottomed at 68 feet below sea level.

Gains County Showings

Amerada Petroleum Corporation's Robbins 1, southern Gaines County wildcat, was yielding about one bailer of fluid, including a small amount of free oil with sulphur water, while drilling in gray lime at 4922 feet, or 1667 feet below sea level. Small wildcat pumper situated 1¼ miles to the north began filling with sulphur water when drilled to 4870 feet, or 1599 feet sub-sea, and did not attain complete shut-off in plugging back to 4850 feet.

Several new tests are in prospect for the high gravity oil pool opened in northern Loving County by Mason Oil Company's Minnie Kyle 2, which flowed 347 barrels of 40 gravity pipe line oil after nitro shot in Delaware sand section at 3853-3898 feet. The hole is bottomed at 3910 feet, with an elevation of 3053 feet. Production was estimated at 250 barrels daily through casing while cleaning out cavings near the total depth, according to a late report.

Price Increases

Inclusion of higher gravity listings and consolidation of grades below 34 gravity on the new price schedule assigned West Texas fields January 28 affords a maximum increase of 21 cents per barrel for the heavy oil and an 18-cent hike for the best grades. The price change was introduced by Humble Oil & Refining Company, largest buyer, and automatically became general due to other ranking purchasers' division orders specifying this company's postings.

Price gain for the district will average more than 10 cents per barrel.

NORTH TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ARCHER COUNTY—		
L. T. Burns et al, J. S. Bridwell 3-A, sec 1852	*	904
Dudley Golding & Cochran, B. R. Jeske 1-B, sec 6	120	1199
Hamilton Pet. Co., John Purcell 2, blk 95	*	1180
C. T. Hedges et al, J. F. Rogers 11, sec 2407	6	1332
W. H. Junker et al, Junker-Kunkle 4 blk 12	*	1293
Kimmel & Woofter, G. Williams 13.	10	591
Kriss & Buzzard, J. J. Perkins 4, blk 21	*	625
Jack Latson et al, J. S. Petty 1	*	805
Lyons & Crews, J. M. Inman 1	*	755
O'Donohoe-Gibson Drl. Co., J. J. Perkins 1-B, sec 11	*	1618
Perry, Woody & Young, W. Duckworth 2, blk 7	*	1418
Rathke Oil Co., G. P. Meade 3, blk 39	3	1467
Whitehill Oil Corp., H. S. Morrison 24, blk 4	12	668
CLAY COUNTY—		
J. M. Tanner et al, G. D. Rigsby 4, blk 2	*	340
JACK COUNTY—		
Thos. D. Humphrey et al, B. F. Rankin 8	234	3000
MONTAGUE COUNTY—		
Gibson-Jennings, Inc.—Sinclair Prairie, Rosa Hodges 1	73	1875
Gulf Oil Corp., W. W. Jones 6-B	10	857
The Texas Co., A. B. Hinton 7	39	785
THROCKMORTON COUNTY—		
Canyon O & G Co., G. C. Wright 2 sec 279	*	366
WICHITA COUNTY—		
J. K. Bailey et al, W. D. McClure 12-A	25	932
G. W. Cooper et al, Waggoner Bros. 44, sec 2	35	1360
Waggoner Bros. 45, sec 2	48	1500
Fain-McGaha Oil Corp., E. P. Griffin 1, blk 2	*	1892
W. B. Omohundro et al, R. C. Cunningham 1, blk 289	*	2508
WILBARGER COUNTY—		
B. F. Butler et al, Waggoner Est 1, sec 25	*	855
YOUNG COUNTY—		
W. F. Collins et al, N. L. Hardy 2, sec 260	*	642
W. G. Horn et al, W. B. Gregg 2	*	732
Kimmell, Lee & Co., R. O. Prideaux 2	10	658
Owenwood Pool, G. P. Stewart 3-A.	*	885
Pitzer & West-Lion Oil Ref. Co., I. H. Gathright 1, sec 617	*	4155
J. H. Rogers et al, T. J. Routon 1, sec 243	*	789
R. E. Skinner et al, D. T. Selvage 1, sec 261	*	633
Worth Oil Co., Cullers 16, blk 19	5	545

*Failures; †Junked; ¶Million cu. ft. gas.

TEXAS PANHANDLE

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
GRAY COUNTY—		
Adams & McGahay, J. S. Morse 7	181	2640
King Oil Co., Archer 9	486	3230
Barrett 2	576	3278
Magnolia, John Haggard 9	612	3310
Mills Oil Co., A. E. Gething 2	20	2625
Sinclair Prairie, Combs-Worley 1-D.	112	3130
Alex Smith 3	400	3275
HUTCHINSON COUNTY—		
E. W. Means et al, E. Cooper 1-C	*	4075
Stanolind, Ware 7-A	264	3115
E. E. Watkins 10-A	584	2944
MOORE COUNTY—		
Texoma Nat'l Gas Co., J. T. Sneed 9	¶24.6	3100
POTTER COUNTY—		
Canadian River Gas Co., T. M. Coughlan 1-A	¶20	2470

*Failures; †Junked; ¶Million cu. ft. gas.

PANHANDLE GASSER

On north line is 35-mile extension

Amarillo.—Unexplored territory near the center of the north line of the Texas Panhandle and 3 miles south of the Oklahoma border has contributed a dry gasser. L. S. Hobbs Oil Company, Amarillo, developed a flow of 4,000,000 feet of gas from lime series at 2690-2850 feet with its initial test on the J. P. Pearson-Hitch tract, SE NW NE Section 290, Block 2, G. H. & H. Ry. Survey, near north line of Hansford County, with an elevation of 3002 feet. This strike is about 35 miles north of nearest gas production in Hutchinson County and northeastern Moore County, but is closer to gas wells in the Oklahoma Panhandle. It is 6 miles northwest of Bernstein. The company acquired lease on a 7000-acre block last May for the drilling of a 3500-foot test.

Magnolia Petroleum Company's E. C. Britain 3, center of Section 185, Block 3-T, T&NO Ry. Survey, prospective wildcat oil producer for sulphur gas field in northwestern Moore County, was awaiting results of acid

treatment in lime pay at 3389-3415 feet late last week. It is about 3½ miles southeast of nearest oil production. The well swabbed 80 barrels of 40 gravity oil the first 24 hours, and 50 barrels the next day, but did not increase its yield when shot with 30 quarts of nitro at 3386-92 feet. Heavy volume of dry gas found in the upper lime was shut off by running 7-inch pipe. The well has an elevation of 3453 feet. Previously completed gassers on the company's 5440-acre lease established the water table at approximately sea level depth.

WEST TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CRANE COUNTY (Gulf-McElroy Field)—		
Gulf, J. T. McElroy 143	193	2953
CRANE COUNTY (McCamey Field)—		
R. H. Henderson & Fred T. Hogan, Hughes 2-B	504	2115
CRANE COUNTY (Waddell Field)—		
Gulf, W. N. Waddell 16	¶5½ & 9216	3543
ECTOR COUNTY (Foster Field)—		
Stanolind, E. F. Cowden 2-B	229	4451
York & Harper, Inc., H. C. Foster 2	†	4220
ECTOR COUNTY (Goldsmith Field)—		
American Maracaibo Co., C. Scharbauer 1-A	¶6 & 2080	4230
ECTOR COUNTY (North Cowden Field)—		
Landreth Prod. Corp., TP Land Trust 3-A	302	4218
Sun Oil Co., L. E. Wight 3-B	274	4215
FISHER COUNTY—		
L. A. Long et al, J. L. Mayberry 1.	*	3324
HOWARD COUNTY—		
C. T. McLaughlin & Co., Otis Chalk 3	198	1592
JONES COUNTY—		
Brown Eagle Oil Co., W. A. Minter 1	*	2170
Fain-McGaha Oil Corp., Mollie Shapard 1	*	2260
N. H. Martin & Son, Dorsey 5-A	426	2160
PECOS COUNTY (Torborg Field)—		
Paul Childress, Tr., Smith-Sinclair 13	13	373
PECOS COUNTY (Wildcat)—		
C. A. Everts Drlg. Co., W. C. Tyrel 1	*	2560
PECOS COUNTY (Yates Field)—		
Ohio Oil Co., I. G. Yates 52-A	4320	1484
I. G. Yates 4-E	80,600	1486
TERRY COUNTY—		
Uscan Oil Co.-Illinois Oil Co., R. A. Brownfield 1	*	5677
UPTON COUNTY (McCamey Field)—		
Cardinal Oil Co.-Cordova Union Shell 1-B	106	2175
Emma Wooley 1-C	213	2115
A. D. Devore & J. R. Minnich, Burleson-Conoco 1	465	2160
R. H. Henderson et al, A. Reese 1.	*	3080
Humble, A. A. Reese 4	456	2635
Magnolia, E. S. Hughes 4	419	2255
WARD COUNTY—		
Bentley & Massey, J. H. Boogher 1	*	2240
Empire O & R Co., W. W. McDonald 20	676	2457
Gulf, G. W. O'Brien 77	619	2747
Richardson Oils, Inc., Hathaway 15	9839	2606
Hathaway 16	1967	2685
Standard Oil Co. (Texas), B. D. Durgin 45	292	2529
WINKLER COUNTY (Brown-Altman Field)—		
Illinois Oil Co., Brown-Altman-Conoco 1	352	3140
WINKLER COUNTY (Halley Field)—		
Skelly Oil Co., S. M. Halley 17	108	2900
WINKLER COUNTY (Leck Field)—		
Harry Adams, Bradley et al, W. P. Edwards-Shell 1	735	2998
WINKLER COUNTY (Sayre Field)—		
Eastland Oil Co., R. Clapp 2-B	2526	3102
Magnolia, State-Walton 3	631	2937
Mid-Continent Pet. Corp., J. B. Walton 11	1241	2960
Navarro Oil Co., Roy Clapp 4	505	3130
Sinclair Prairie, Walton 12	1205	2975

*Failures; †Junked; ¶Million cu. ft. gas.

Third Well Due

OIL SHOW IN NORTHEAST MONTAGUE SHALLOW TEST

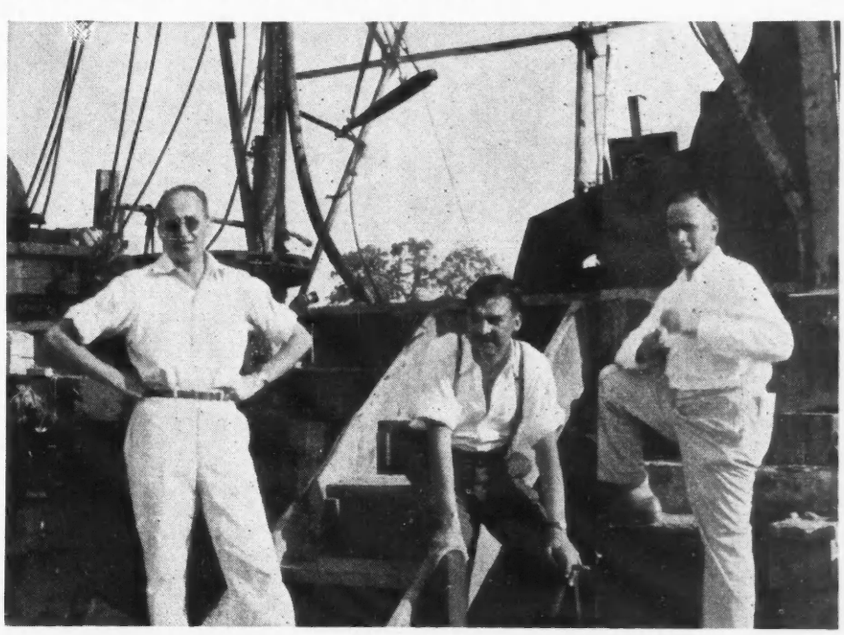
Wichita, Falls, Texas.—Third shallow oil producer is in process of completion on the northeastern Montague County drilling block held jointly by Sinclair Prairie Oil Company and Gibson & Jennings, Incorporated. The partnership probably controls the entire producing structure, which yields 31-32 gravity oil from the Canyon or Hoxbar sandy-lime series near the 1700-foot level. Sinclair Prairie Pipe Line Company built a line into the pool, which centers about six miles northeast of Nocona.

Presence of shallow production was known when the partnership's D. T. Holt 1, NWc N½ Block 45, Kaufman County School Lands, A-407, passed up favorable showings in attempting to fulfill a 6500-foot contract, or Ordovician lime test. The original test was abandoned in granite last August at 3615-3648 feet. Holt 2, located 990 feet out of the northwest corner of Block 45, was completed in November from Canyon at 1697-1731 feet, pumping 74 barrels initially. Rosa Hodges 1, located about 3500 feet southeast of the producer, is rated at 70 barrels daily after a small nitro shot in broken sand at 1740-55 feet and oil sand at 1755-65 feet, having plugged off salt water logged at 1869-75 feet. Hodges 1 is about 275 feet structurally lower than the discovery pumper. Holt 3, the third prospective producer and situated 440 feet east of the discovery, has cemented pipe to complete after logging oil sand at 1722-1738 feet, and rotary has been skidded to Holt 4.

Sinclair Prairie Oil Company owns ⅝ interest in the producing leases and surrounding 2200-acre block, and Gibson & Jennings, Inc., Dallas, comprised of H. F. Gibson, R. E. Jennings and Frank M. Gould, own the remaining interest. The latter firm also has full interest in 2300-acre block adjoining on the south. Acquisition of the two blocks and exploratory work was predicated on surface geology by Frank Gouin, Duncan, Oklahoma, consulting geologist and operator.

Archer County has added a new shallow oil pool through the completion of Peery, Woody and Young's W. Duckworth 1, Block 7, J. W. Harris Club Ranch sub-division, rated as a 35-barrel pumper from sand at 1396-1404 feet. It is about two miles northwest of the Oldham pool.

A. R. Eppenauer, Fort Worth, et al are negotiating for the erection of a well pressure absorption type natural gasoline plant to handle production from the prolific gas and distillate well completed early this year on the Eddleman tract, about 2½ miles southeast of Graham, Young County. The discovery well, which is rated at 40,000,000 feet of sweet gas and 250 barrels of distillate daily from Marble Falls sand at 4209-43 feet, has remained shut in since snubbing in tubing. Rathke Oil Company et al's C. W. Johnson 1-A, located about one mile to the southwest, was slated to resume drilling to try for production in the Marble Falls late last week after failing to make a commercial producer with the aid of acid in Caddo lime saturation at 3990-4002 feet.



Left to right: Robert E. Jennings, Frank M. Gould, both of New York, and H. F. Gibson, Dallas, owners of Gibson & Jennings, Inc., which participated with Sinclair Prairie Oil Company in opening a new shallow oil pool in northeastern Montague County, Texas.

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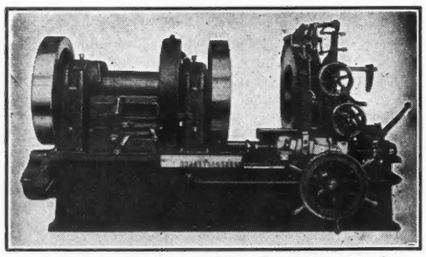

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ALLOWABLE ADVANCE

New wells boost field to 450,000 barrels

EAST TEXAS — WEEKLY STAFF REPORT

Kilgore.—Allowable production of the East Texas field advanced beyond the 450,000-barrel level the past week for the first time since last April. Listing of 9 new wells on January 26 boosted the field's quota to 450,174 barrels daily from 22,080 wells, including 16,623 marginal producers that are restricted to a maximum of 20 barrels daily. On this date there were 54 dead wells, according to Railroad Commission records. Non-marginal wells have been prorated to 2.32 percent of their rated hourly flow since June 21, 1936. This factor will be retained for the February schedule.

Average proration allowable per well currently amounts to 20.388 barrels daily. The gross earning of the average well was boosted $2.45 to $25.89 per day by the new price schedule made effective 7 a.m. January 28 by Humble Oil & Refining Company and later adopted by the majority purchasers. The above figures do not include revenue derived from the sale of casinghead gas which is adequate to cover field labor expense on many of the flowing properties.

The East Texas field added 35 flowing and pumping wells and 2 dry holes the past week. Sharp reduction in volume of completions will occur next week because unfavorable weather slowed down field work during the fore part of January. Current report on field activity reveals about 50 rigs in service, and a pickup in volume due to a rise from the recent approval of a large number of well permits that involved close spacing.

EAST TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
JOINER AREA—		
Atlantic, E. L. Pinkston 11-D (108-ac)	750	3639
Ed T. DeArman & W. R. Skeen, Rogers-Tipps 3 (50-ac)	270	3598
W. H. Gant, Garvin & Wegener, W. P. Moore 28 (134.24-ac)	750	3572
Harry Hanbury et al, Van Zandt-Ohio 1 (36.17-ac)	50	3642
Van Zandt-Ohio 3 (36.17-ac)	30	3661
Humble, A. D. Blackwell 53 (325.79-ac)	7500	3631
Hunt Oil Co., R. W. Fair 25-A (136.72-ac)	7000	3685
Luling O & G Co., J. P. Maxwell 2 (5-ac)	480	3656
M. H. & Jim McMurrey, G. Williams 1	*	3610
Royal Pet. Corp.-R. H. Dearing, J. W. McDavid 13 (57.48-ac)	100	3690
Spandsco O & R Co., J. Bell 6 (36-ac)	8400	3775
Sun, J. P. Seale 5 (199.32-ac)	600	3689
Texas Canadian Oil Corp., A. Kersh 9 (101.76-ac)	2500	3653
Geo. C. Walters, M. M. Cross-Ohio 3 (60-ac)	720	3675
KILGORE AREA—		
Bay Oil Corp., A. Godfrey 5 (26½-ac)	10,000	3566
Friedman Oil Corp. & Swindler, Mayfield 12 (123-ac)	1500	3707
Gulf, S. Hilburn 91-C (68.95-ac)	4600	3667
E. M. Jones et al, L. D. Crim 3 (10-ac)	480	3565
Shell, J. B. Watson 60 (385.2-ac)	9200	3565
Sun & Seaboard, W. L. Pentecost 17 (131½-ac)	8600	3631
Eddie Thompson et al, S. King-Hilburn 10 (36-ac)	6500	3640
LONGVIEW AREA—		
Arkansas Co, Burnsides 42 (209-ac)	10,500	3509
Atlantic, W. E. Jones 2 (31.09-ac)	10,000	3750
W. W. Bradley et al, O. F. Smith 8 (28½-ac)	7200	3654
Dean Bros. & Adkisson, O. M. Victory 7 (30.29-ac)	3000	3646
M. T. Flanagan Prod. Co., Fee 5 (40-ac)	7000	3662
Humble, D. Johnson 9-B (57.8-ac)	9000	3624
Nivla Oil Corp., W. T. Morgan 2 (40.6-ac)	*	3850
Pete H. Pewitt et al, J. T. Jones 4 (46-ac)	4000	3777
J. H. Sobey 2-A (23-ac)	3000	3731
Shell, G. W. Richey 27 (169-ac)	8000	3606
Stanolind, Minnie Jones 16 (83.23-ac)	8800	3608
F. K. Lathrop 25-B (114.8-ac)	5000	3630
J. G. McGrede 9 (46.18-ac)	7200	3583
Tide Water Associated, E. M. Nettleton 16-A (148¾-ac)	5200	3495
J. E. Watts et al, O'Byrne 7 (144.6-ac)	1000	3777
Jim O. Whittington et al, J. C. Bumpas 9 (31.6-ac)	9300	3553
ANDERSON COUNTY (Cayuga Field)—		
Tide Water Associated & Seaboard Oil Corp., Wills 27-A,	¶60	4078
ANDERSON COUNTY (Long Lake Field)—		
Z. L. Robinson & Boone Hombs, Fee 1 (7½-ac)	¶25 & 25	5337
FRANKLIN COUNTY (Talco Field)—		
Humble, A. P. King-Hughes 18	337	4324
HOPKINS COUNTY (Sulphur Bluff Field)—		
Empire O & R Co., J. E. Worsham 2	1080	4525
TITUS COUNTY (Talco Field)—		
B. G. Byars et al, L. Blackburn 2-C (16-2/3-ac)	1000	4308
J. C. Burnett & Jack Hearrell (was Carter), Dean-Adkisson 1, lot 3	288	4352
Humble, H. C. Fry 2-A (87-ac)	700	4328
K-A Oil Co., Talco Townsite 4-31, lot 4, blk 31	400	4330
Magnolia, W. H. Crawford 4 (80-ac)	373	4310
Alex U. McCutchin et al, Talco Townsite 1, lot 4, blk 28	336	4342
H. B. Ownby Drlg. Co., J. F. Barton 2 (4.8-ac)	188	4285
J. S. Rushing et al, C. T. Mitchener 2 (37.2-ac)	240	4315

*Failures; †Junked; ¶Million cu. ft. gas.

HUMBLE BUYS PLANT

General American unit brings $1,250,000 cash

Longview.—Humble Oil & Refining Company has purchased General American Oil Company's 10,000,000-foot capacity natural gasoline plant near Reeds Switch in the north Rusk County section of the East Texas field for $1,250,000 cash, according to reports. Deal also includes a gas gathering system and gas purchase contracts involving about 900 wells connected with the plant, which was completed early last year by Gilliland Refining Company. Humble Oil & Refining Company owns two large plants that have been in operation since the latter part of 1931, and operates an 8-inch natural gasoline line from the East Texas field to Baytown, located on the Houston Ship Channel.

Saxet Deep Showing

NEW LONDON AREA GETS READY FOR MORE TESTING

WEEKLY STAFF REPORT

Corpus Christi.—Deep tests in the Saxet field, Nueces County, held the interest of South Texas Gulf Coast during the past week with one showing for a producer and several more coring for the 6750-foot horizon. Only one producer has been completed in this deep sand, hence these new tests are being watched with keen interest to determine the extent of this producing zone. Outside of the Rio Grande Valley sector, this is the deepest oil being produced in South Texas.

T. P. Morgan and Chapman Minerals Corporation's Morgan-Clark 5, originally abandoned at 6401 feet, is coring ahead below 6817 feet. It cored the deep sand at 6730-35 feet and found shale and sandy shale to 6791 feet. A drill stem test from 6730-91 feet developed approximately 1250 feet of pipe line oil and 270 pounds working pressure in 15 minutes.

In the same field, Oso Drillers' N. J. Roark 4, northeastern portion of the field, is coring below 6365 feet. Republic Natural Gas Company J. K. Ordner 3 is coring at 6760 feet. Conservative Oil Company's Rand Morgan 4-B is making hole below 6526 feet. One new producer is being completed in the 6300-foot sand, being Pan American Production Corporation's Solar Sevier 3, which has sand at 6255-80 feet. On a drill-stem test at 6269-80 feet, it developed 230 feet of oil, 130 feet of salt water and 125 pounds pressure in several minutes. Casing will be set on bottom.

Premont Extension

Premont field, Jim Wells County, was being extended more than ¼-mile to the north by William F. Morgan's Laughlin 1, Lots 39 and 42, Section 72, which flowed while drill-stem test was being made at 2349-56 feet. Casing has been set. This well is considered to be unusually important to the field, as it indicates that this sand may cover a fairly large area.

An immediate drilling campaign for the London field, recently opened by Wellington Oil Company's Stockton 1, Nueces County, is assured. Several offset locations have been staked and preparations are being made to move in rigs. Allen and Seaboard Petroleum Corporation's J. O. Chapman et al 2, 9000 feet southwest of the above well, is drilling around 2000 feet, while Edwin M. Jones Lucy Cooke 1, 3 miles to the northeast in Section 139, is ready to spud.

Wellington Oil Company and Pan American Production Corporation have installed high-pressure separator in Sevier 1-A, deep test in the Clara Driscoll field of Nueces County. It opened a new sand when it flowed considerable distillate through perforations at 5348-56 feet. Al Buchanan and Blanco Oil Company's F. Gandy 1, one mile north of the field, is deepening from 6990 feet to at least 7500 feet.

Aransas Area Active

The new McCampbell field of Aransas County is becoming active with more producers being completed in the 6500-foot sand. The structure is mapped as a large affair, but the actual development has been slow in getting underway. Four wells are active in the field at this time.

East of the above field and at the Lamar Townsite, Barnsdall Oil Company's K. J. Edwards 1 is coring below 7745 feet. It is reported to have had several fairly good oil showings above this level.

In the Green Lake area of Calhoun County, Mills Bennett et al's Williams 1, wildcat, is drilling below 6065 feet, and reported to be logging about normal. It is nearing the top of the Frio.

Considerable interest is centering around the Bentonville field of Jim Wells County with several wells at critical depths. One mile north of production, Stanolind Oil & Gas Company's King 3, is coring at 5680 feet, while La Jita Corporation's Frame Bowers 3 is coring around 5810 feet. Several other wells in the general area are nearing the levels at which they are expected to produce.

455 TEXAS STARTS

Austin.—The Railroad Commission approved last week 455 permits for drilling new wells in Texas, 261 more than were allowed the week before.

East Texas led the list with 113 locations, which included 67 in Gregg County, 41 in Rusk County, four in Upshur County and one in Smith County.

There were 102 locations from the Gulf Coast, with 50 in Nueces County, 10 in Brazoria County and 10 in Harris County. Southwest Texas reported 77 permits, including 33 in Duval County. West Texas reported 71 permits with 28 in Ward County, 13 in Winkler County and 10 in Ector County. There were 15 locations from the Panhandle.

North Texas listed 21 locations with 18 in Jack County, and there were 18 from West Central Texas, which included 11 in Shackelford County.

Deepest Well

HIDALGO PRODUCER GETS DISTRICT RECORD

Mission.—Deepest production in South Texas was established January 24 when Pantano Petroleum Corporation's James McDougall 1, Hidalgo County wildcat, flowed a large volume of gas along with a small amount of distillate and considerable wash water after casing was perforated at 7867-75 feet. This well is 200 feet deeper than the only producer in the La Sal Viejo field, Willacy County, present deepest producer.

The newest producer is located 190 feet from the south line and 640 feet from the east line of Block 1, Lot 2223, La Blanca Grant, and is 1 mile south of Pantano and Speed's Harding 1 which blew out from about 7800 feet several months ago and cratered. The Harding test is credited with being the discovery well of the La Blanca field, despite the fact that it was not completed as a commercial producer.

The McDougall producer drilled to 8067 feet, setting casing on bottom and perforating at the 7867-75-foot level. The well is credited with having logged sand between 7845-7915 feet. When first brought in, the test built up a pressure of 2750 pounds on tubing through ⅛-inch choke, and showed 2600 pounds on casing. The pressure built up to 3200 pounds and the tubing was shut in. After flowing several days through ⅛-inch choke, its pressures increased to 3200 pounds on tubing and 3100 pounds on casing. The latest reports on the well are that it is flowing a small quantity of high gravity oil (slightly colored from clear distillate) and a large amount of gas through ¼-inch choke, the pressures being 2600 pounds on casing and 2800 pounds on tubing. The last shut-in pressure test was 3400 pounds.

In the same general area, Sterling Oil & Refining Company's J. C. Engelman 1, a projected 8000-foot test, is setting surface string.

To Pump Starr County Well

Moss & Heard's Ricaby 1, wildcat northeast of Rio Grande City, in Starr County, is preparing to install pumping equipment after plugging back to 1316½ feet. The well previously flowed

both oil and salt water from sand at 1309-20 feet, but the plug-back job of 3½ feet cut off most of the water. It is showing considerable 21/3 gravity oil, but no pressure.

Preparations were being made late in the week to spud Stapper Petroleum Corporation's Port Isabel Irrigation Company 1, 8500-foot test to be drilled 15 miles northwest of Port Isabel in Cameron County, in Block 17, Port Isabel Irrigation Company Subdivision, Espiritu Santo Grant, which is to be drilled under contract by Osage Drilling Company. The test is located on 5000-acre drilling block, but the company holds leases and options on additional leases in the area approximating 50,000 acres. The test is on a geophysical prospect, which may be a large fold or deep-seated salt dome.

In Willacy County, Shell Petroleum Corporation et al are expected to start within the next several days on deepening of Yturria Land & Cattle Company 1, which opened production on the La Sal Viejo field some time ago at 7662 feet. The test has been making considerable salt water and the oil production has declined materially. It likely will be drilled to 9200 feet if production is not found at a shallower depth.

Conroe Sand in Duval

LARGE FOLD OR DEEP SEATED SALT DOME INDICATED BY TEST

Laredo.—Hiawatha Oil & Gas Company had drilled plugs and was preparing to perforate casing in Southland Life Insurance Company 1, which is expected to open a new Conroe-sand oil field 6 miles southeast of Benavides in Southeastern Duval County. The well, bottomed at 5869 feet, is considered to be one of the most outstanding strikes in years in South Texas and may lead to an extensive exploratory campaign for this type of production. The test is located 330 feet from the south and east lines of Section 15, Agua Poquita Grant, and is in a block of approximately 15,000 acres held by the Hiawatha Oil & Gas Company (Benedum & Trees).

This well topped the Jackson at 4342 feet, Hockleyensis at 4650 feet and Cockfield at 5704 feet. Elevation is 385 feet. The producing sand was encountered at 5845-69 feet, the top being 141 feet below the top of the Cockfield, or likely the Conroe sand. A drill-stem test developed sufficient 42.4 gravity oil to indicate good producer, following which casing was set on bottom.

Fold or Dome

The test is of great importance as it indicates a large fold or a deep-seated salt dome of low relief. It varies from other fields in the Mirando district generally in that the production is from sand lenses along shore lines rather than from structural features. In addition it paves the way to a new trend along the eastern side of the Mirando district. At present, the deepest production in the Mirando district is from 3600 feet, that being in the Bruni townsite area of the Cole field, Webb County.

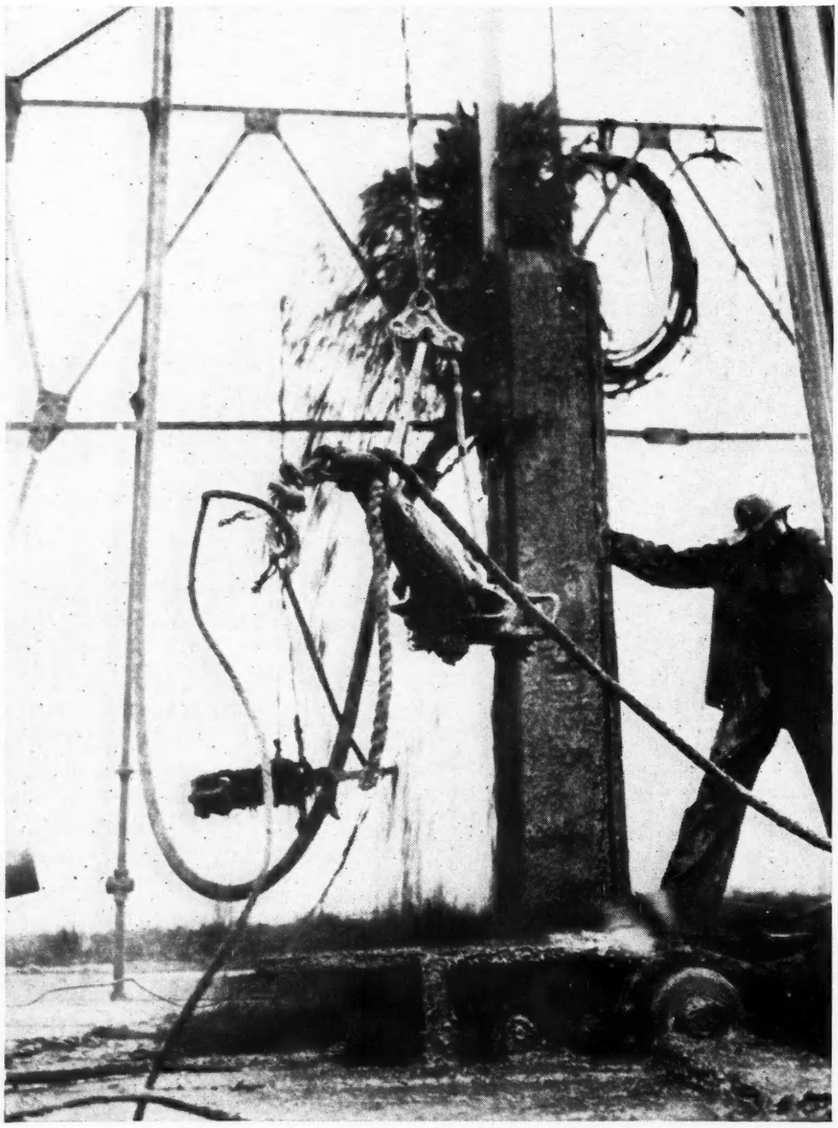
Duval County Well Blows Out

In the extreme northwestern portion of Duval County, another prolific Mirando sand trend appears in the making with N. V. Duncan completing a large producer in Worden & Drought 3. The well blew out while in process of completion at 1531-37 feet, ran wild for 5 hours, flowing at the rate of about 50 to 60 barrels of 21 gravity oil per hour. It was killed and at last reports was being recompleted through tubing. Elevation is 402 feet, derrick floor.

This well is located in Section 151, about ½-mile west of the original producer in the Charamousca field. They are about the same depth from the surface of the ground, but structurally, the Duncan well is nearly 100 feet deeper. The Charamousca discovery had only a thin sand lens and produced oil for a short period. More than 50 feet of sand was logged in a nearby well in the same level at which the Duncan well is producing. This would indicate that another trend of production was being established at a shallower level in this district.

Deepen Labbe Test

Magnolia Petroleum Company has deepened A. L. Labbe 2, one mile north of the Labbe gas field, after topping the upper Loma Novia sand at 2904 feet. The new depth is 2915 feet, in oil sand, where a test is being made. If this well, in Section 1, is completed as an oil well, it



Making a drill stem test of N. V. Duncan's Worden & Drought 3, which opend a new deeper producing horizon in the Characmousca field, western Duval County.

(Photo courtesy Dean Roland, San Antonio)

will establish oil production in this area. One gasser, 1¼ miles to the southwest, is near the same level.

Magnolia Petroleum Company was not so fortunate in J. M. Garcia 6, wildcat in Section 786, two miles northeast of Oilton. The well cored oil sand at 2015-28 feet, set casing, but developed 20 feet of salt water after swabbing 27 hours.

In the extreme northwestern portion of Webb County, Wilcox Oil & Gas Company's Puig Brothers 1, Section 9, Galan Grant, was drilling below 5500 feet, expected to be abandoned within the next few feet. Same company was rigging Dunbar 1, Section 1135, same grant.

REAL COUNTY

San Antonio, Texas.—Sun Oil Company's Oppenheimer & Dietert 1, projected Ordovician lime test for northern Real County, encountered about 250,000 feet of sweet gas production in lower Pennsylvanian at 4426 feet while drilling with cable tools. Gas was found in soft formation underlying a thick section of hard lime. First Pennsylvanian was logged at 1390 feet, with an elevation of 2380 feet. The test is located in Section 7, GWT & P Ry. Survey, near center of a 20,000-acre block. Plateau Oil Company et al's Hatch 1, located 5 miles to the north, recently resumed drilling at 4750 feet after being idle for a long period, and had progressed to 4770 feet.

Deepest Edwards

PEARSALL PRODUCER IS AT 6230-FOOT DEPTH

San Antonio.—Amerada Petroleum Corporation has definitely established oil production in the Edwards lime in the Pearsall field, Frio County, through completion of Halff & Oppenheimer 8. The well is in the lime at 6230 feet, after topping that formation at 6219 feet. First saturation was encountered at 6228 feet.

The well started cleaning through tubing, but the 2½-inch pipe bridged. Efforts were made to remove the bridge by swabbing, but the swab was lost in the hole. The pressure on the casing built up to 2400 pounds, closed. It was released and allowed to flow through ½-inch choke on the casing. On an 11-hour gauge after the well commenced flowing through the casing, it made 174 barrels of 39 gravity oil with 550 pounds working pressure. The gas volume was estimated at 7,000,000 cubic feet.

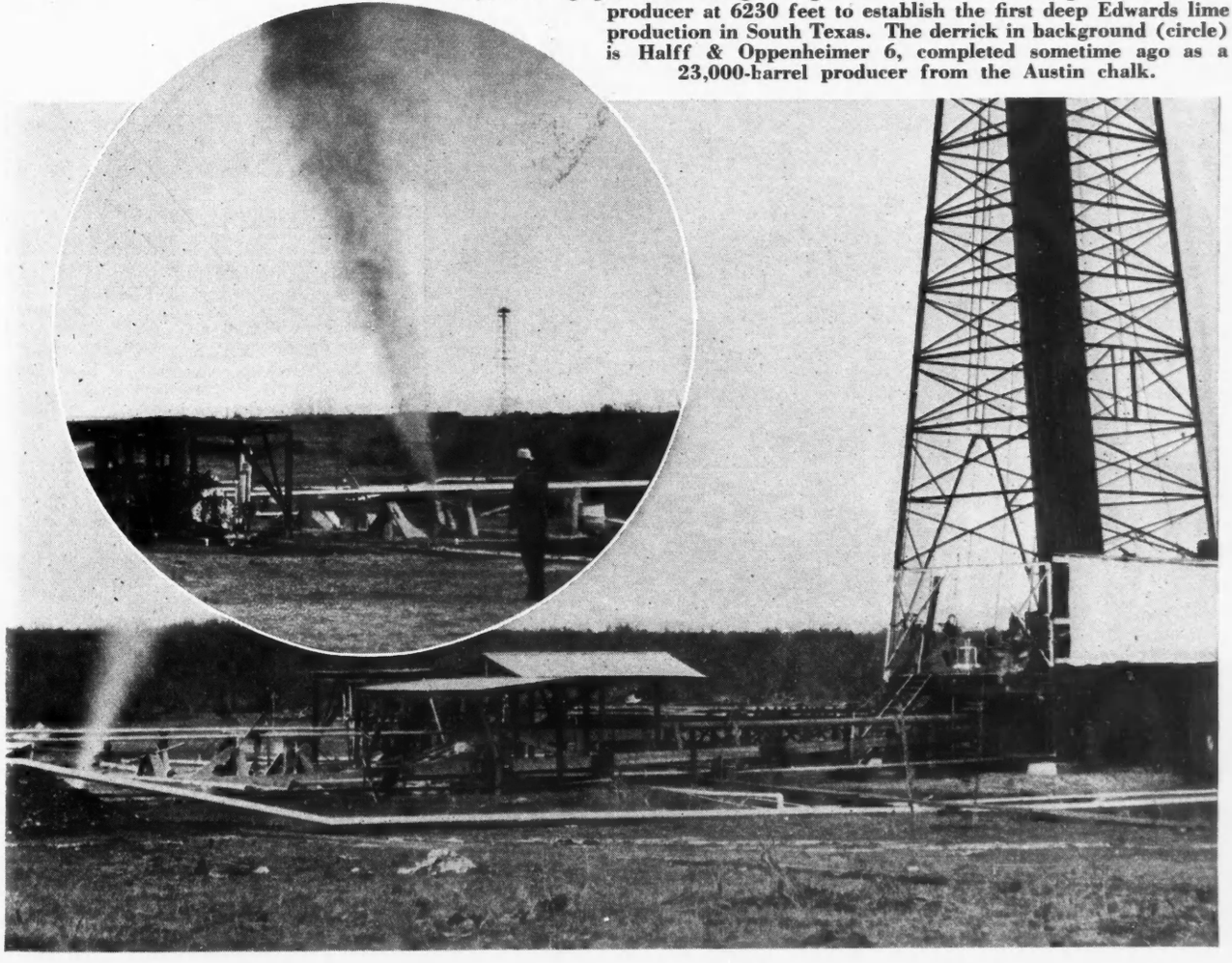
The well is located 1500 feet from the south line and 1700 feet from the east line of the San Antonio Ditch Company Survey No. 1104. It is on the northwest side of the Pearsall field and in the vicinity of producers which have been completed in the Austin chalk at 5300-3600 feet and the Buda lime at 5800 feet.

Completion of this well as a producer at this level establishes Edwards lime production 3500 feet deeper than the present deepest level.

TEXAS LEASE SALE

Austin.—State Land Commissioner Wm. McDonald has announced that bids will be received on February 25 on oil and gas leases of 2034 acres of state prison lands in Brazoria County. The land lies east of the Missouri-Pacific Railway and constitutes a part of the Darrington State Farm. It is in the A. McFarland and D. Tally leagues.

Amerada Petroleum Corporation's Halff & Oppenheimer 8, Pearsall field, Frio County, blowing gas while being brought in. It has been completed as an oil producer at 6230 feet to establish the first deep Edwards lime production in South Texas. The derrick in background (circle) is Halff & Oppenheimer 6, completed sometime ago as a 23,000-barrel producer from the Austin chalk.



SOUTH TEXAS
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
SAN ANTONIO DISTRICT		
BEXAR COUNTY—		
J. H. Devine et al, Golla 1, 150 ft sl and 150 ft wl of 100-ac tr, Jose Bustillo sur No. 29, 1½ mi e Hange & Donnell No. 1 Mahula..	*	508
GUADALUPE COUNTY —		
J. E. Clark et al, Grimm 1, (S. Darst Creek) Green DeWitt sur.....	*	2619
MAVERICK COUNTY—		
Rio Dev. Co., Winchester Kelso 1, 150 ft wl of 297 acres in survey 2 (3 mi ne from Eagle Pass) and 3450 ft sl of survey 2.....	*	1003
CORPUS CHRISTI DISTRICT		
ARANSAS COUNTY—		
Buckingham Oil Co., McCampbell Ranch 2-A, (McCampbell) sec 41 McCampbell Ranch subd	385	6549
CALHOUN COUNTY—		
Humble & Plymouth, 7-A P. H. Welder (Heyser) 466 ft sel of lse A. Sisneros sur 1292		5470
Welder 8-B (Heyser) Agaton Sisneros sur	530	5490
HIDALGO COUNTY—		
Harrison-Danvers, Guerra 4-A (Samfordyce) porc 38 & 39, 5000 n of discovery, perf 2940-50.....	160	3000
Henshaw Bros., de Chapa 1, (Samfordyce) porc 39, Reynosa Juris, perf 2945-50	165	2986
JIM WELLS COUNTY—		
Gist & Graddy, Owens 1, (Bentonville) Poitevent sur 3 mi n field..	*	5308
George E. Smith, Wade 1 (Sandia) W. H. Bode subd, Wade Ranch, Jean Gert sur	*	4570
LIVE OAK COUNTY—		
Loma Oil Co., Reagan 1, 1800 ft n of rd, 350 ft fr el John Turner sur, ab. 38—1182-ac tr 1 mi east Hagan & Stewart S. A. Stk Bank 300 ft S. Frio River	*	1620
Ohio Fuel Supply Co., Goebel 1, (Oakville) Louis Romaro sur A-395	*	3164
V. G. Schimmell et al, West Est. 1, (W) 3¼ mi Geo. West, center 160-ac tr in J. Poitevent sur 231..	*	4216
NUECES COUNTY—		
W. F. Morgan, Bird 1, 330 ft s and w lines of E. R. Oliver sur No. 162, 2½ mi w of Baldwin field....	*	6009
Pan American, Sagarin 3-B, (Saxet) C.E.I.P. & M. sur 500, perf 5836½ 42½	490	5848
Port Oil & Gas Co., Country Club Place 10, (Saxet Heights) Rincon del Oso sur, perf 4080-85.....	370	4088
Rossth & Genacov, Caddell et al 1, (Saxet Heights) blk M, Harvor View Est	430	4073
Ben J. Smith et al, Kleberg 1, (Saxet) A. B. & M. sur.....	*	4200
Stamex Oil & Gas, Cox & Cryer 1, (Buckholt) 930 ft el and 330 ft south nl 72-ac tr, Ward & Gallagher sur No. 316 & 166, 1000 ft sw Sherman Nelson 1 Buckholt...	*	4571
Sam Wilson, Jr., McGaughan 1, (Saxet Heights) blk 2, Oak Park addn, lot 1 and 2	600	4080
REFUGIO COUNTY—		
C. Andrade & Renwar Oil Corp., Cummings 1, (Refugio) 78-ac tr Refugio Town Tracts.....	*	5041
SAN PATRICIO COUNTY—		
Conroe Dr. Co., G. W. Pullin 6, (Taft) 2nd addn to Taft Farm Lands, lot 4, sec 1	600	4929
VICTORIA COUNTY—		
Barnsdall & American Lib., Pickering & Buehler 7, (Placedo) A. Murray sur 660 ft ne No. 6.....	550	4770
Pickering & Roos 12, (Placedo) S.A. & M. G. sur, 660 ft se No. 11	430	4776
LAREDO DISTRICT		
DUVAL COUNTY—		
Gilcrease Oil Co. & Tom Graham, Escobar 1, 330 ft nl & el blk 4, sec 2, 829.5-ac tr, Juan Jose Manuel de la Garza Falcon Gr, Buffalo Tex. subd	*	4254
Humble, DCRC 4-C, sec 901 (Lopez)	90	2091
M. C. Hubberd 18-B, sec 83, (Loma Novia)	800	2760
M. C. Hubberd B-64, sec 83, (Loma Novia)	5	2783
Magnolia, DCRC 1, sec 902, B. S. & F. sur, (Lopez)	¶25	2065
C. W. Hahl 54, sec 67 (Loma Novia)	¶5	2754
Mrs. Emma Herbst 10, sec 70 (Loma Novia)	*	2937
Mortimer & Springer, Peal 12-B, sec 796, (Lopez)	350	2121
Peal 14-B, sec 796 (Lopez).....	440	2104
Ralph Ogden, Bishop Cattle Co. 10, sec 135 (Loma Novia)	*	2878
Rio Bravo Dr. Co. & Coates, Inc., Peters 1-D, sec 397 (N. Kohler)..	*	2638
Wellington Oil Co., Welder heirs 27, sec 383 (Seven Sisters).....	880	2473
Westheimer & Daube, Z. Campos 28, sec 224 (Seven Sisters)	160	2710
McMULLEN COUNTY—		
Humble, Edrington 3, 330 ft sl & el of n½, A.B. & M. sur.....	*	3159
Edwin M. Jones, Harry Ezzell 2, 330 ft wl, 990 ft nl of 160-ac tr, sec 13, Patrick Fadden sur.....	*	2318
Loma Oil Corp., Jacob Corp. 108-A, Fadden sur No. 8 (Jacob)	*	873
Jacob Corp 109-A, Fadden sur No. 8 (Jacob)	*	900
Rowan & Hope, Edrington 1, 500 ft wl, 660 ft nl & sl of n½, se¼ sec 71 (Rhodes)	¶15	1775
STARR COUNTY—		
F. Davenport & Slick-Urschel, T. B. Slick Est 1, 330 ft nl, 990 ft el of sec 485	†	5607
WEBB COUNTY—		
Mills Bennett, Lopez 4, sec 111, blk 1 (Lopez)	235	2246
O. W. Killam, Bruni 2, sec 585, G.C. & S.F. sur	*	3318
Kirkwood & Morgan, Frost Natl Bnk 1, 330 ft sl, 990 ft el sur 734...	*	2500
Smith & Taggart, Jones 1, 2310 ft nl, 330 ft el sur 674 Rush Transportation Co. sur	*	2508
ZAPATA COUNTY—		
George Buck, Haynes 1-B, sur 14, Haynes subd, Commitas & Villa Gr (Comitas)	*	1098
H. L. Curry, Trevino 4, Charco Redondo Gr (Charco Redondo)...	4	248
Magnolia, A. D. Haynes 16, sur 7, Haynes subd, Comitas & Villa Gr (Comitas)	50	1140
B. W. Roscoe, Bustamante 10, sh 33, Fansler Partition, Comitas Gr (Escobas)	75	1167
United Prod. Corp., Haynes 18, blk 13, Haynes subd, Comitas & Villa Gr (Comitas)	*	1162
Valley Osage Oil Co., Haynes 8, sur 14 (Comitas)	75	1072
Zapata Corp., Garza Est 10, blk 20, Douglas subd, Zorro Ranch, Comitas Gr (Escobas)	60	1197

*Failures; †Junked; ¶Million cu. ft. gas.

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STAR DRILLING MACHINES

New Field Found

SANDY POINT WILDCAT GETS DISTILLATE FROM 6501 FEET

WEEKLY STAFF REPORT

Houston.—A new gas and distillate field was discovered in the Texas Gulf Coast January 27, when H. De Armand's Fite 1, Sandy Point area, D. Talley Survey, Brazoria County, came in flowing gas with a small amount of distillate from the lower Marginulina-Frio sands through ¼-inch choke with tubing pressure of 2200 pounds and casing pressure of 2500 pounds. Casing was perforated with 11 shots from 6489 to 6501 feet, and the wildcat was washed for 1 hour and 40 minutes before it started showing wet gas. At the end of the week, De Armand was placing bottom-hole chokes in the well to increase the distillate production. Fite 1, drilled to 7013 feet, cored several sands below 6400 feet which showed gas, distillate and salt water. The best sand was found from 6440 to 6451 feet, which showed around 6 ohms on an electrical logging device. Seven-inch casing was cemented at 6611 feet.

Pure to Drill Peach Point

On the Peach Point prospect in Brazoria County, Pure Oil Company announced location for T. M. Slade 1, 1399 feet north of the south line and center of the east and west line of the Slade 46-acre tract in the S. F. Austin Survey, Abstract 20. The area was worked with reflection seismograph in 1935. Several shallow wells drilled in this area have shown oil and gas. Pure Oil Company paid over $125 per acre for acreage in this area. Gulf Oil Corporation and Felmont Oil Corporation also have considerable protection acreage at Peach Point. It is reported that geophysical work showed the structure to be deep in this area, and it may be the Slade 1 will be drilled to and beyond 10,000 feet.

Lochridge field, Brazoria County, was extended 2200 feet southeast when Gulf Oil Corporation made a producer out of Gibson 1, J. W. Hall Survey, at 6365 feet in Frio formation. Gibson 1 came in for 22 barrels of pipe line oil per hour through 5/16-inch choke with tubing pressure of 2350 pounds and casing pressure of 2500 pounds.

3400-Foot Dickinson Extension

Dickinson field, Galveston County, was extended around 3400 feet northwest last week when Diadem Oil Company completed W. J. Way at 8099 feet flowing around 470 barrels of 35.5 corrected gravity pipe line oil daily through ¼-inch choke with tubing pressure of 650 pounds and easing pressure of 300 pounds. Casing was cemented on bottom and perforated from 8088 to 8097 feet with 17 shots. This completion is located near the Dickinson townsite and may cause drilling within the city limits of Dickinson. Several major companies have acreage in the area, and it is believed that it will be farmed out for drilling.

East of production at Silsbee, Hardin County, Republic Production Company was swabbing Brooks 5, G. W. Brooks Survey, at 6998 feet. Oil sand was topped at 6949 feet and gas sand was logged from 6805 to 6840 feet. On a drill stem test from 6805 to 6840 feet the well showed a 400-pound casing pressure and 45 feet of gas cut mud in 5 minutes through ¼-inch choke. Seven-inch casing was cemented at 6957 feet.

Humble Oil & Refining Company announced location for a well at Silsbee. M. L. Kirby 1 is 466 feet out of the northwest corner of a 200-acre tract in the G. W. Brooks Survey.

At Hockley in Harris County, Stanolind Oil & Gas Company's J. Warren Minerals 1, H. & T. B. Survey No. 1, was drilling in shale at 4767 feet at the close of the week after coring salt water sands from 4499 to 4556 feet.

R. W. Ford announced location for W. A. & O. C. Pruitt 1, 447 feet from the south line and 2700 feet west of the east line of a 160-acre tract in the G. Brooks Survey, Harris County.

TEXAS GULF COAST
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ANAHUAC—		
Humble, White 17	¶	7014
BOLING—		
A. F. Speer and J. Deerining, Kasperick 1	23	3925
CONROE—		
Feltex Oil Co., Keystone Mills B-3.	161	4996
Sun, Keystone Mills 21	375	5053
DAMMON—		
W. A. Plaster, Dammon 1	*	930
DICKINSON—		
Diadem Oil Co., Way 1	470	8099
HASTINGS—		
Stanolind, Sheffield 1	600	6080
Wagner 1	620	6080
HULL—		
Gulf, Phoenix 114	65	2900
LOCHRIDGE—		
Gulf, Gibson 1	525	6365
MANVEL—		
Harrison & Abercrombie, Stratton 2	*	6020
PICKETT RIDGE—		
Texas Co., Nelson 4	*	4712
PIERCE JUNCTION—		
Hamil & Smith, Prudent 2	200	4995
RACCOON BEND—		
Humble, Hardy B-10	312	4214
SILSBEE—		
Republic Prod. Co., Ellery 2	*	lcn.
SOUTH HOUSTON—		
Stanolind, Green 1	226	4775
Owens 2	408	4000
TOMBALL—		
Humble, Hilligeist 4	576	5547
Hutchins 1	120	5547

*Failures; †Junked; ¶Million cu. ft. gas.

Clay Creek Test Hits Salt

On the southeast flank of Clay Creek field, Sun Oil Company's Lauter 1, N. Clay Survey, was shut down in salt at 8306 feet at the end of the week and will probably abandon at that depth. Top of the salt was logged at 8240 feet and the top of the cap rock was encountered around 8231 feet. After running an electrical logging device, the operators decided to shut the well down for a while.

Sun Oil Company was washing Hebert Broussard 2, Labelle area, W. B. Burton Survey, Jefferson County, for another production test of sands at 8211 to 8218 feet. Casing was perforated with 46 holes, and tubing was run. This wildcat was given a test on January 13 and showed an estimated 120 barrels of distillate daily through ¼-inch choke and had tubing pressure of 250 pounds and casing pressure of 3100 pounds from sands at 8190 feet.

On the southeast side of Amelia field, Jefferson County, Humble Oil & Refining Company was cutting and pulling casing in Tyrell Combest 3, A. Savary Survey, at 6781 feet. The well was swabbed and showed oil but the operators could not get the well to flow.

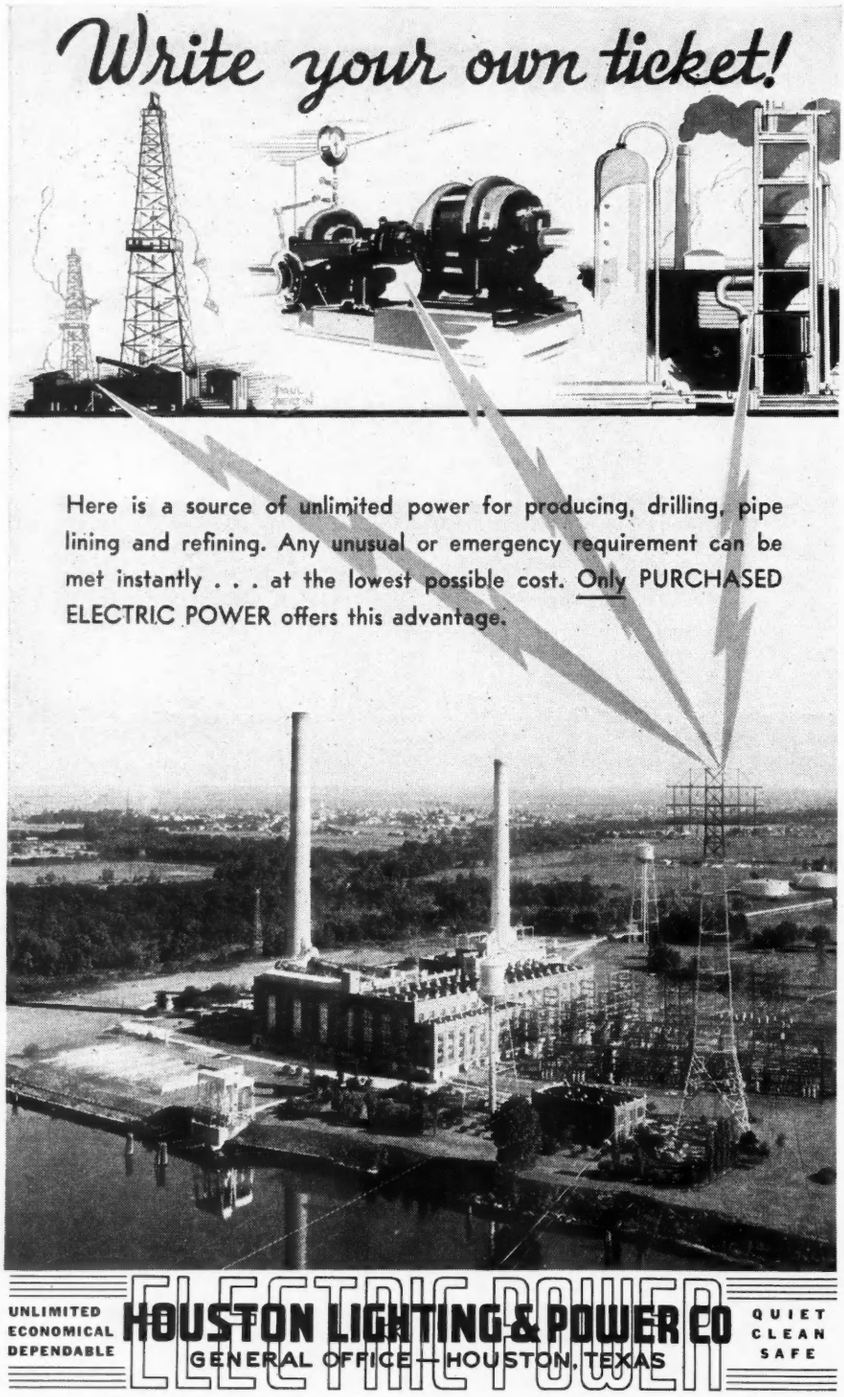
Humble Oil & Refining Company made location for T. H. Cook 1, Amelia field, Jefferson County. It is 2200 feet east of the west line and 3050 feet north of the south line of the C. Williams Survey.

Anahuac Well Completing as Gasser

Humble Oil & Refining Company is completing Middleton 25, Anahuac field, Chambers County, as a gas producer at 6765 feet. This well will furnish gas to the new 10-inch pipe line which is being laid. The gas is furnished to industrial centers along the new gas system which Humble Oil & Refining Company is constructing.

North of production at Amelia, Humble Oil & Refining Company is preparing to drill White 17, J. McGahey Survey, deeper. A production test at 7014 feet showed 145,000 cubic feet of gas through a quarter-inch choke. Tubing pressure was 2310 pounds; casing pressure, 2500 pounds.

On the northeast side of Hastings field, Brazoria County, Humble Oil & Refining cored oil sand in C. Brown 2-B and set casing for a production test. The hole was drilled to 6060 feet after logging the oil sand at 5812 feet. Casing was set at 5995 feet. In the same area, Humble Oil & Refining Company's Holdale 1, B. B. B. & C. Survey, Lot 16, was completed making 25 barrels of pipe line oil per hour through a quarter-inch choke, with a tubing pressure of 890 pounds. Oil sand was logged at 5915 feet and 5¾-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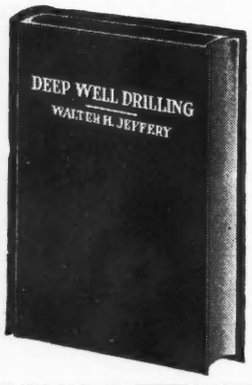

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inch casing was set at 5993 feet. Bottom of the hole is at 6080 feet.

Stanolind Oil & Gas Company completed two wells at Hastings last week. Wagner 1, H. & T. B. Survey, Section 29 was completed at 6080 feet flowing 620 barrels of pipe line oil daily through a quarter-inch choke with a tubing pressure of 885 pounds and a casing pressure of 695 pounds. Sheffield 1, H. & T. B. Survey, No. 1 was completed making 195 barrels in seven hours through a quarter-inch choke from 6080 feet. Tubing pressure was 900 pounds and casing pressure was 860 pounds.

WILD GAME DINNER

Sixteen hunters, men connected with the oil and oil supply business, were hosts Thursday night at a wild game dinner at the Houston Club in Houston, with more than 500 guests. Most of the guests were connected with the oil industry and came from all over the country to be present.

The dinner was the outgrowth of a hunting trip in Wyoming last fall, although such dinners had been given in previous years by some of the hunters who have been going to Wyoming for several years. Hosts were:

Harry W. Bass, Earnest Cockrell, Barney Cockburn, Wm. Coplin, S. P. Brown, D. E. Legan, A. T. (Cap) McDannald, L. O. McMillan, S. S. (Pete) Parker, Gurney Peoples, A. H. Rowan, Ed H. Salrin, Floyd Senter, R. Y. Smith, I. L. (Swede) Sorenson, and John R. Suman.

Moose, elk and antelope meat was served with all the trimmings. John R. Suman presided as toastmaster, and Earnest Cockrell gave a running talk while moving pictures of the hunt were being shown.

The program consisted of extemporaneous remarks by the toastmaster, who gave some inside facts on the hunt; the movie; a radio broadcast, and short talks by speakers who were unexpectedly called to the rostrum. The remarks were all "off the record." Speakers were: Fonville, mayor of Houston; John Lovejoy, president of Seaboard Oil Company; Dan Moran, president of Continental Oil Company; Ernest Thompson of the Texas Railroad Commission, and Wm. Blanton, manager of the Houston Chamber of Commerce, who arose to oratorical flights in a framed-up talk which connected on what was purported to be a Washington radio broadcast hook-up being completed.

TO ENLARGE LINE

Shreveport. — Gulf Refining Company, pipe line division, is preparing to enlarge its pipe line capacity out of Rodessa field to 30,000 barrels daily through the construction of about 30 miles of 8-inch loops and a 7-mile 6-inch loop. The latter will extend from the field to Potter station. A 10-mile loop will be built between Waskom and Chatterton stations, and 20 miles of loops will be added between the latter point and Timpson. Seven additional pumping units will be erected at four mainline stations.

12,210-Foot Gas

OPERATORS TRY TO MAKE OIL WELL OF ABBEVILLE TEST

Lake Charles.—Evidence that gas in commercial quantities will be found at 12,210 feet—the deepest in the world—with possibilities of future oil production, was shown by Continental Oil Company's Hebert 1, Abbeville prospect, Section 20-12s-3e, Vermilion Parish, January 24, when the well came in making dry gas from what is believed to be Vicksburg formation. The wildcat was washed for two hours after tubing had been hung at 11,735 feet, and the test came in making dry gas through a quarter-inch choke with a tubing pressure of 3650 pounds and a casing pressure of 3550 pounds.

Five-inch casing had been cemented at 11,795 feet, and sands from 12,200 to 12,210 feet were tested. At the end of the week the tubing was plugged and there were no pressures on either tubing or casing. It is reported that heaving shale has filled part of the hole. The company has encountered considerable trouble with the heaving shale. Now that it has heaved up in the hole more trouble will be experienced. It was believed that the operators intended to lower the tubing and try to convert the well into an oil producer.

10,000 Feet of Open Hole

The first well in the world to drill 10,000 feet of open hole is Stanolind Oil & Gas Company's Fred Stovall 1, South Abbeville prospect, Section 89-14s-3e, Vermilion Parish. Surface casing was cemented at 1980 feet. There are 10,020 feet of open hole in Fred Stovall 1. It was debated during the week after running an electrical logging device whether to set a string of 7-inch casing at 12,000 feet, but was later decided to carry the well on down without setting casing. The hole is not over two degrees off vertical at the bottom, and the operators say that it is in such good condition that no casing need be set at present. Casing is already at the location and will be run as soon as needed. If and when the casing is run, it will be the longest string of 7-inch casing in the world. It is believed that Fred Stovall eventually will be the deepest well ever drilled. It is already the second deepest well in the Louisiana Gulf Coast and is the third 12,000-foot test in the world.

Amerada Petroleum Corporation and Stanolind Oil & Gas Company's Calcasieu National Bank 1, China prospect, Section 28-7s-3w, Jefferson Davis Parish, was coring at 7601 feet and has encountered several sands showing oil and gas. It is also running higher structurally than other wells drilled in the area. On a core from 7596 to 7601 feet the well showed oil and gas. Several more cores will be taken and then a drill stem test made. The wildcat is being watched with much interest as it looms as a discovery well for a new oil field in the Louisiana Gulf Coast.

New Salt Dome Found

A new salt dome was discovered in the Louisiana Gulf Coast when William Helis' City of New Orleans 1, Marchland prospect, Section 19-23s-23e, Lafourche Parish, top of the salt at 7465 feet, and were still drilling in the formation at 7480 feet at the end of the week. This wildcat stands a good chance of opening another oil field in the coastal country of Louisiana. Sand and shale with streaks of sand was cored from 7430 to 7450 feet. Hoard Exploration Company discovered the prospect in 1936 with reflection seismograph.

Tide Water Associated Oil Company is drilling an interesting test on Venice Dome in Plaquemines Parish. Manhattan Fruit Company 1, Section 26-21s-30e, was coring in shale with streaks of lime at 6079 feet at the close of the week after coring several sands showing oil and gas. A core was taken from 5934 to 5952 feet which showed from five to 14 ohms. One from 5982 to 5986 feet showed five ohms on an electrical logging device. The well probably will be carried on down and then plugged back and a drill stem test made if no other sands are found at a deeper depth.

Test Shows Salt Water

Approximately 11 miles west of Houma, Terrebonne Parish, Shell Petroleum Corporation's Realty Operators 1-B, Section 18-17s-15e, was drilling in shale at 8943 feet after making a drill stem test which showed oil, gas and salt water. The test was made from 8630 to 8660 feet in eight minutes through quarter-inch chokes and showed a 500-pound gas pressure, 60 feet of gas cut mud, 15 percent oil and 150 feet of salt water. Sand and shale were cored with odors of oil from 8461 to 8660 feet.

At Anse La Butte in St. Martin Parish, Stanolind Oil & Gas Company was preparing to make an electrical logging test of sands around 5500 feet at the end of the week. The operators drilled into salt around 5388 feet, and it is reported that the bit went out of salt at around 5500 feet and then went into sand. It is not known what kind of sand was encountered.

New Location at Big Lake

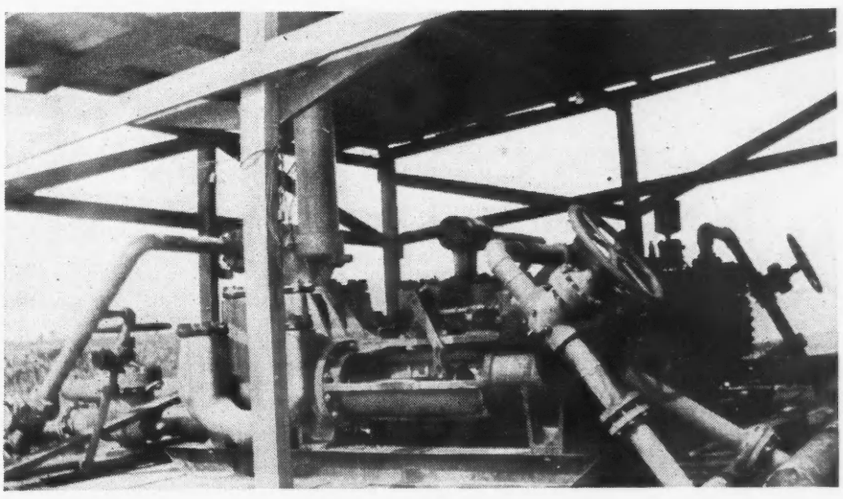
In Cameron Parish, Union Sulphur Company made location for J. O. Hebert 1 in the Big Lake area. It is 1282 feet north and 4021 feet west of the southeast corner of Section 18-12s-8w. This is the first wildcat location made in the area by Union Sulphur Company since taking over the properties from Magnolia Petroleum Company. Magnolia Petroleum Company has drilled several dry holes in the district and has completed one gas and distillate producer.

The Texas Company was preparing to set a string of seven-inch casing at the end of the week in State Fausse Point 2, Fausse Point area, Section 35-11s-8e, Iberia Parish, after topping salt at 7151 feet and drilled in the formation to 7157 feet. It is understood that the company encountered soft sand and

SOUTH LOUISIANA
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
JENNINGS—		
Cosmo Pet. Co., Jennings Clements 5	15	1642
NEW IBERIA—		
Canal Oil Co., Bernard 5	552	4604
SULPHUR—		
Union Sulphur, Fee 839	275	3982
TEPETATE—		
Continental, Homeseekers A-10	152	8320
Homeseeker D-2	*	lcn.

*Failures; †Junked; ¶Million cu. ft. gas.



Two 20-inch slush pumps were used on Continental Oil Company's Hebert 1, drilled to 12,210 feet.

shale around 6430 feet and will make a test of the sands the coming week.

The Texas Company is headed for the 10,000-foot mark in State Lake Barre 37, Lake Barre field, Section 30-21s-20e. At the end of the week the crew was drilling ahead below 9902 feet in shale, having already established a new deep drilling record for the Lake Barre field.

At Charenton in St. Mary Parish, Pan American Production Company's Lawes 2, southwest of the discovery well, Section 30-13s-10e, was reaming at 6243 feet at the end of the week after making a drill stem test from 5838 to 5847 feet which showed a 400-pound gas pressure in four minutes through a quarter-inch casing and 15 feet of 31.6 gravity oil.

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BOX 1080

SHREVEPORT, LOUISIANA

To Feel Floods

[*Continued from page 14*]

out, although this is not yet definite.

Flood waters are expected to shut down operations at Lake Washington, White Castle, Lake Hermitage, Lafitte, Venice Dome, Charenton and several other fields.

In the Charenton field of St. Mary Parish, water the past week rose two feet in Grand Lake, and Pan American Production Company commenced the construction of levees around its wells. If the water rises much higher, which it seems certain to do when the Ohio River flood comes, all operations in the field are expected to be shut down. The company is disconnecting its storage tanks at the bottom valve. This will allow water to fill the tanks and perhaps keep them from floating away. Roads, many of which are of wooden construction in this territory, are being anchored down to trees.

In the lower section of the Atchafalaya basin the damage is not expected to be as great. This area is a low swampy district and the water probably will spread out through the many swamps, lakes, bayous and channels until much of its force will be lost. But the upper section of the basin will have water with sufficient force to carry heavy equipment downstream.

Blasting of Levees

The blasting of levees by government engineers in the upper Mississippi River valley may relieve some of the pressure on the lower country. But, if the water reaches a stage 10 feet higher than the 1927 flood levees in the lower section of Mississippi probably will be blasted also, turning additional water in the Atchafalaya basin.

There appears no doubt but that a "super" flood is on its way to South Louisiana. Fortunately, companies operating in the region have considerable time to move equipment and to take as many precautions as possible against the rising waters. Despite all protective moves, however, production will be retarded in several districts.

During the past several years the United States Government has been carrying on a flood program for the area. More than $1,000,000 are estimated to have been spent monthly. Now this flood—perhaps the greatest in the history of the Mississippi—is headed toward these newly constructed levees, locks and canals.

The Mississippi River at Angola in West Feliciana Parish meets the Red River. During floods water backs up the Red River a short distance and then over floods in the Atchafalaya basin, which is quite low and composed of numerous swamps.

The Atchafalaya basin is divided into three sections, namely: West Atchafalaya basin; East Atchafalaya basin and Grand Lake basin. The West Atchafalaya basin covers parts of Avoyelles and St. Landry Parishes. East Atchafalaya basin runs through Pointe Coupee, West Baton Rouge, Iberville and Assumption parishes, while the Grand Lake district includes parts of Terrebonne, Lafourche, St. Martin, Iberia and St. Mary parishes. The floodway extends 140 miles north and south and from 20 to 40 miles east and west.

During the 1927 flood it is estimated that 480,640 acres were flooded in Avoyelles Parish, 377,600 acres in St. Landry Parish. In the East Atchafalaya basin it was estimated that 831,360 acres were flooded in the four parishes in this district. The Grand Lake region is said to have 904,160 acres under water in the five parishes of which it is composed. The entire South Louisiana acreage flooded in 1927 is estimated at 2,693,760 acres.

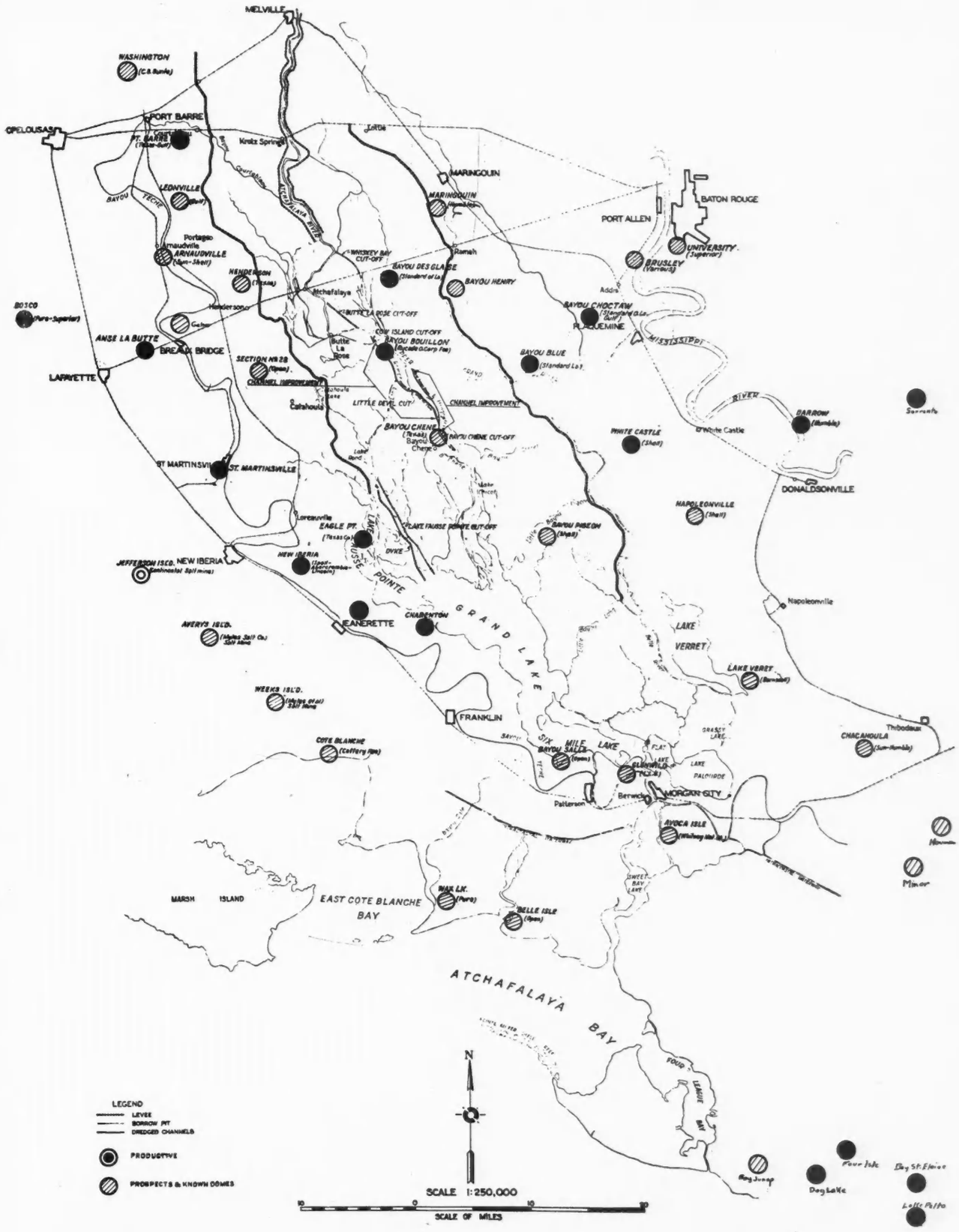
Started in 1933

Work by the United States Government for improvement in the Atchafalaya River district and other streams of the basin has been in progress since 1933. The Atchafalaya River has been dredged and straightened by the largest collection of barges, dredges, snag boats and quarter boats assembled since construction of the Panama Canal. The work in the area has also comprised the excavation of cut-offs, improvements of channels, and the creation of drainage canals as well as improvements of existing canals. There have been numerous levees constructed.

It will be interesting to watch government engineers combat the waters of the Mississippi when it gets at flood stage. It is believed that locks will be opened at Plaquemines in Iberville Parish to allow the water to flow into the swamps, bayous and channels. This will probably flood the area between the east levee built on the east side of the Atchafalaya River and the west levee of the Mississippi River. If this is done, it may hit the White Castle field where Shell Petroleum Corporation operates. At Donaldsonville in Ascension Parish, another lock probably will be opened for drainage from the Mississippi River. Further down the Mississippi, but still above New Orleans, the Bonnett Carre spillway will probably be opened to allow the water to run into Lake Ponchartrain and out through Lake Borgne. In 1927 it is reported that water went five to seven feet over the locks at Plaquemines, and in 1911 that water at Donaldsonville flowed into Bay Lafourche. Levees built along the Atchafalaya River are 10 or 15 feet high, and if the flood stages go beyond this, the water will probably go over the west levee and shut down operations at Port Barre field in St. Landry Parish.

26 LOUISIANA PERMITS

Shreveport.—Twenty-six drilling permits were authorized last week in Louisiana by the minerals division, State Conservation Commission. Of these, 12 were in North Louisiana, divided among the following parishes: Caddo 9, Caldwell 1, Webster 1, Winn 1. In South Louisiana, the 14 permits were divided among the following parishes: Acadia 3, Calcasieu 2, Cameron 1, East Feliciana 1, Evangeline 2, Iberia 2, Terrebonne 2, Vermilion 1.



Map of Atchafalaya Flood Basin showing South Louisiana oil fields and prospective fields where development is underway that will be affected by Mississippi flood control efforts. The heavy black lines indicate levees built parallel with the Atchafalaya to direct the flow.

Two Are Testing

NO UNUSUAL NORTH LOUISIANA DEVELOPMENTS

WEEKLY STAFF REPORT

Shreveport.—Testing operations under way at a well 14 miles southwest of production at Rodessa and along the Jefferson-Rodessa fault, and at a 3½-mile outpost in the Sligo district of Bossier Parish, claimed main attention in the Shreveport territory as the week closed.

Bad roads, due to recent heavy rains, continued to hold back many new operations and slowed up work at others as the North Louisiana area ended another week with no unusual developments.

Holcomb & Thomason, Flesh & Hootkins' Henderson 1, R. Bennington Survey of Marion County (Texas), 3 miles north of Jefferson along the Rodessa fault, again shared the spotlight as it drilled plug preparatory to perforating casing for completion from the 5990-foot level where it showed for a gas distillate producer on a drill stem test. The well set 7-inch casing at 6088 feet after the hole was drilled through the two lower Rodessa pay levels to 6408 feet without any further shows. Opinion is divided as to whether the well is on a different structure or on an extension of the Rodessa field structure.

Sligo Extension Looms

A 3½-mile northeast extension of the recently discovered Glen Rose oil horizon in the Sligo gas district of Bossier Parish loomed as the week closed as Arkansas-Louisiana Gas Company prepared to test its Davis 1, Section 8-17-11, bottomed at 5192 feet. Seven-inch casing was set at 5144 feet with top of the Petitt oil sand reported logged at 5156 feet.

A north offset to the second oiler completed from this zone, Triangle Drilling Company's Skannal I-1, Section 22-17-12, was running casing preparatory to testing at 5162 feet. There are five other active tests under way to the new producing horizon.

Superior Buys Block

In the Pelican district of DeSoto Parish, the wildcat of Pearl Oil Corporation et al, Joyner 1, Section 28-11-12, was erecting tanks for testing a show logged at 2287-99 feet, after which 8⅝-inch casing was set. High water delayed testing earlier last week. The Superior Oil Corporation bought a 51 percent interest and managing control in 2200 acres around the well.

The first location around the new field opener in Claiborne Parish, E. T. Oakes et al's Patton 2, Section 1-20-5, was staked this week by Ray Oden of Shreveport for Patton 1, SE SE Section 36-21-5, about ¼ mile north of the discovery. Operations will start immediately. Patton 2 produced from 5300 feet.

The Cotton Valley test of Magnolia Petroleum Company, Cox 5, Section 23-21-10, Webster Parish, is seeking possible deeper pay zones below the new lower Marine producing section at 8200 feet. It continued to core ahead below 8550 feet as the week closed. Several sands showing gas and distillate saturation have been logged.

Offsetting a wet gasser completed from the Blossom sand to open a new structure northwest of Plain Dealing, Bossier Parish, Triangle Drilling Company (Plain Dealing Syndicate) was coring for top of this producing level at 2805 feet in Bolinger 1, Section 36-23-12.

The Bienville Parish Travis Peak test of Seaboard Oil Company, McGee 1, Section 3-16-6, halted at 7550 feet to wait on 7-inch casing. Operators will run an electrical logging device and then casing to test several shows up the hole, perforating at levels holding promise. In a core from 7534 feet to bottom a gas show was reported.

Five miles southwest of production in the Rodessa field, Arkansas-Louisiana Gas Company's W. S. Ford 1, Charles Grayson Survey of Marion County, was drilling ahead below 5675 feet, with the outcome of the well due to be partly known this week. In the gas producing part of this field on the Louisiana side, R. W. Norton's Payne 1, Section 27-23-16, proposed 10,000-foot test, was drilling ahead below 7750 feet.

Lease Play in Border Counties

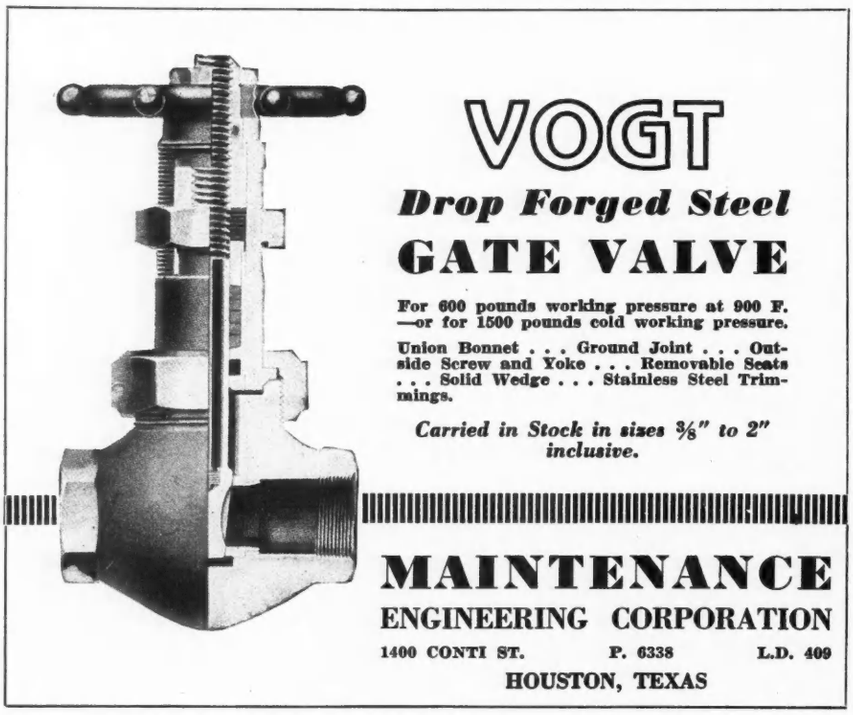
Starting of a Trinity test soon in the Douglasville area of Cass County by McAlester Fuel Oil Company was indicated last week as the company was reported to have paid off its 6000-acre block. The acreage lies north of Douglasville around the southeast corner of the Calloway Davis Survey.

In the northwest corner of Marion County, near the Upshur County line, D. H. Oliver et al continued adding to a block being assembled in that area. Operators already have about 2500 acres.

Around the Bethany gas area of Panola County, where it has had seismograph crew engaged for some time, Humble Oil & Refining Company last week purchased 3300 acres. The acreage was located in the M. Richardson, B. Anderson, J. Womack, Jane Tharpe, B. Lovell, E. Williams and surrounding surveys.

Along the trend it has been buying for several months, Gulf Oil Corporation last week increased its holdings by approximately 2000 acres in northern Angelina County. The Shell Petroleum Company continued to work two seismograph crews in this county last week.

WILLIAM M. RAY, former superintendent of gasoline plants for Magnolia Petroleum Company, Dallas, has been placed on the retirement list after completing 23-2/3 years of continuous service.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LANCE CREEK IS ON STRAIGHT 435 BARSELS PER 40 ACRES

ROCKY MOUNTAIN FIELDS

WEEKLY STAFF REPORT

Casper, Wyo.—Top allowable basis of 435 barrels per 40 acres drilled, regardless of wells drilled per 40 acre tract or potentials of the wells, has been adopted by major producers in the Lance Creek field, Niobrara County, eastern Wyoming, in allocating that field's 12,000 barrel daily output.

On this basis Ohio Oil Company is allocated a little over 40 percent of the production, Continental Oil Company 40 percent, and Argo Oil Company a little more than 17 percent. Thirty-three wells are on production in the field. Of this number 27 can make the allowable or more, and six can make only part of the allowable. Ohio Oil Company has 11 full wells, and 3 part wells; the Continental Oil Company, 10 full wells, and three part wells, and the Argo Oil Company, five full wells, and one part well.

Lance Creek Ranks Second

Lance Creek is ranking second among Wyoming's fields, comparing favorably with Salt Creek which is producing around 16,500 barrels daily. The large increase in Lance Creek production has come through the Stanolind Crude Oil Purchasing Company's contract for 5,000 barrels daily, which started November 1, 1936, and will run for four years. Other outlets are 5,000 barrels daily to Ohio Oil Company and 2,000 to the Continental Oil Company for consumption at its Glenrock, Wyoming, and Denver, Colorado, refineries.

The three Lance Creek producers are undertaking a joint study of bottom hole pressures and gas-oil ratios of Lance Creek wells in order to determine a method of obtaining greatest ultimate recovery of oil from the basal Sundance sands, principal producing horizon of the field. The work is being carried out by A. W. Buell, independent practicing petroleum engineer, and Charles S. Lavington, geologist for the Continental Oil Company.

Two Extensions Likely

Extension tests of Lance Creek field to the west and the northeast appeared good for commercial completions on preliminary tests this week. Argo Oil Corporation's Ford 3, SW NW 33-36n-65w, a quarter mile north and quarter mile east of the nearest production, showed 700 feet of oil through the drill stem in a half hour from seven feet of basal Sundance sand topped at 3973 feet. The well cored 10 feet deeper and stopped for a drill stem test, but the seat would not hold. It is waiting on cement to set around the seven-inch string landed at 3973 feet.

On the west side of Lance Creek, J. M. Huber Corporation's Joss 2, NE NE SW 6-35n-65w, swabbed and flowed 60 barrels in two hours and went dead. The company is cleaning out and rigging up pumping equipment. The test topped basal sand at 3974 feet and stopped at 3899 feet.

Ohio Oil Company's Lamb 9, CSE NE 5-35, an inside location, is coring in the basal Sundance at 4045 feet and checking low. The company's No. 7 Carrie Putnam, NE SW 33-36n-65w, is drilling at 1860 feet; Leo 5-OPC-16, a mile east of the nearest production, is rigging up rotary.

A. B. Cobb and the Holly Development Company's Nat Novick 1, NE SE SW 6-35n-65w, is drilling at 3450 feet in new hole after side-tracking out of old hole. The well is a south offset to Huber's Joss 2.

Continental Oil Company's Schuricht 5-A, CNW SW 5-35n-65w, in the south end of the Lance Creek field, is drilling at 3340 feet.

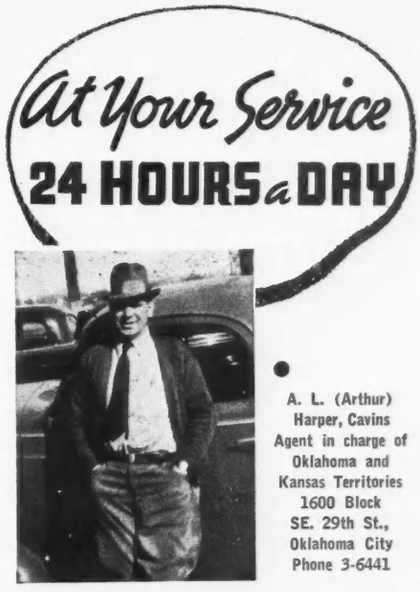
Completing at Quealy

The California Company is spudding one well and completing another in

MOUNTAIN STATES Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
MONTANA		
GLACIER COUNTY (Cut Bank Field)—		
Glacier Production Co., Federal Land Bank 1, csw sw 30-34n-5w.....	100	2872
A. E. Wilkinson, Allotted 2-111, csw sw 31-33-5w	180	3016
Tribal 2-12, se nw nw 7-32-5w...	95	3022
TOOLE COUNTY (Kevin Sunburst Field)—		
Ohio Oil Co., Berg 4, csw sw 31-33-1w .....¶1½		1341
YELLOWSTONE COUNTY (Mosser Dome)—		
R. C. Tarrant, Harper 1, cel sw nw 4-3s-25e	*	1145
WYOMING		
BIG HORN COUNTY (Garland Field)—		
Ohio Oil Co., Smith 2, w nw se 35-55n-97w	380	4201

*Failures; †Junked; ¶Million cu. ft. gas.



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the Quealy Dome light oil field, Albany County, southeastern Wyoming. Holst 5, CSW NE SE 13-17n-77w, cemented seven-inch production casing at 3670 feet on top of the Dakota sand, where it recovered oil saturated cores to 3674 feet. Well will be deepened further into the sand. Holst 6, NE SE 13-17n-77w, is spudding.

Ohio Oil Company's deep well to the untested Embar-Tensleep horizons underlying the Rock River field, Carbon County, Wyoming, Harrison-Cooper 7, CNW 2-19n-78w, is shut down for engine repairs at 4734 feet.

In the Big Medicine Bow field, Ohio Oil Company and the California are rigging up rotary for Union Pacific-Cronberg 4, CSW SW 25-21n-79w, while William Kyle 2, CSE SE 26-21n-79w, is waiting with derrick up.

Cold Slows Byron-Garland Work

With the temperature down to 20 degrees below zero in the Byron-Garland area of northern Wyoming, operators working to bring Stock Oil Company's Allen 1, SE NW 35-56n-97w, Garland field, under control were considerably hampered. The crew is attempting to melt out ice around the well head with steam preparatory to connecting heavy pumps and pumping mud through the 1200 feet of drill pipe in hole to kill the gas flow. Meanwhile, pumping water through the relief well 190 feet to the northwest is continued. Pumping operations through the relief well have reduced the gas flow from 60,000,000 feet daily to an estimated 5,000,000 cubic feet. A second fire, burning at the crater a few feet to the east of the well and at loose connections around the lateral escape manifold braidenheaded to the surface string, was shot out two weeks ago by Frank Lesh, veteran Rocky Mountain shooter. Lesh used his "cannon" method of introducing shots to the fire through a water cooled casing. This method was first tried out on this well in extinguishing a fire last June.

Byron Well Waits on Pump

In Byron field, Ohio Oil Company's Clarrissa Willey 1, SEc NE NE NW 25-56n-97w, is waiting on pumping equipment for production test. The well swabbed 120 barrels in 24 hours from the Tensleep sand at 5250-5429 feet. State 1, NEc 35-56n-97w, is drilling at 4533 feet.

Sidney H. Keoughan and the Taylor Oil Company's Robinson 1, SW SW SW 24-56n-97w, is awaiting a break in the weather to resume after setting up new boilers. The test shut down at 2890 feet.

In Moffat County, northwestern Colorado, the Mountain Fuel Supply Company's Hal Stewart 1, CSW SW 31-12n-24e, is drilling at 2915 feet. This test is in the recently discovered Powder Wash oil field in which the first commercial oil was brought in from Tertiary beds the past December.

Montana Operations Shut Down

Sub-zero weather and driving winds and snow brought operations throughout Montana to a virtual standstill. Only four operations in the Cut Bank field, all at nominal depths, are drilling spasmodically while all activity in the Kevin-Sunburst field is tied up.

Cut Bank field had one new location announced, though no work started on the well. Glacier Production Company staked a location for Abraham 1, CSW SE 19-34n-5w.

The two important tests of the Montana Dakota Utilities Company, R. S. Smith 1, CNE SW 8-4n-62e, Little Beaver Creek Dome, Baker-Glendive anticline, Fallon County, in the northeastern part of the state was delayed by weather from testing at 6750-65 feet where it had a good showing of oil, while Warren 2, CSW 23-8n-69e, in the Baker gas field, Baker-Glendive anticline, was shut down for weather at 6361 feet.

Los Angeles.—The Federal Government is making another effort to secure title to Section 36 in Kern County, Elk Hills Oil Reserve lands, with the filing of a suit January 20 in United States District Court in Los Angeles. The action is directed against Standard Oil Company of California, Pan-American Petroleum Company, estate of the late Edward L. Doheny and others. The action seeks to have decreed the Federal Government as owner of the land in question, reported to be worth around $10,000,000.

The new suit asks for an accounting for recovery of about $13,000,000 worth of oil, gas and natural gasoline extracted from the gas produced in this section.

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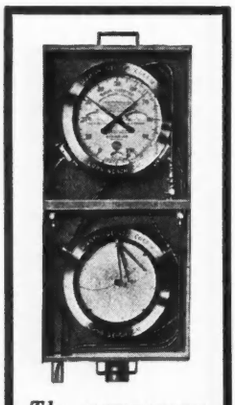

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Two Big Wells

NORTH BELRIDGE COMPLETIONS YIELD HALF STATE'S INITIAL

WEEKLY STAFF REPORT

Los Angeles.—Although California recorded completion of 21 producers with a combined initial production of 20,805 barrels last week, more than half of the flush oil was contributed by two deep wells brought in at North Belridge field by Belridge Oil Company. No. 35-15 was completed at 8400 feet for 9775 barrels of 30 gravity clean oil and 12,000,000 cubic feet of gas. No. 1-12 was good for 4600 barrels of similar gravity oil.

The latter had cemented 16-inch at 847 feet, and 11¾-inch at 5460 feet. Nine-inch casing was landed at 8035 feet. A total of 515 feet of 4¾-inch, including 480 feet of perforated, was landed at 8510 feet. A string of 2½-inch tubing was hung at 7959 feet. Tubing pressure was 1325 pounds, casing pressure 2800 pounds. This well penetrated the Wagon Wheel formation at 8052 feet, and entered the Salt Creek shale at 8181 feet.

Belridge Oil Company's No. 35-15 had 2100 pounds on the tubing and 2890 pounds on the casing. In this hole, 16-inch surface casing was cemented at 751 feet, and string of 11¾-inch was landed at 5480 feet. Nine-inch was cemented at 8095 feet. Then 340 feet of 4¾-inch, including 300 feet of perforated, was landed on bottom. This hole was spudded September 23, 1936, and completed January 18, 1937.

North Belridge Development Slow

North Belridge field in Kern County is one of the most prolific fields in the state, although drilling activity is held to a minimum. Belridge Oil Company is drilling two holes, is rigging rotary for the third hole, and has announced location for still another. Union Oil Company is drilling one well, Belridge 20, which has reached 8510 feet and plugged back to 8445 feet for a swabbing test. Last casing in this hole was 8⅝-inch, cemented at 8293 feet.

One of the most interesting wildcats being drilled in Kern County is Superior Oil Company's K. C. L. 8 in the general Ten Section area. It has reached 10,100 feet in shale. This test is located about 3½ miles northeast of the Ten Section discovery well. It is generally considered that this hole will prove a new field, if it finds production, rather than an extension of the Ten Section field. The last casing cemented was 13⅜-inch at 1347 feet. This shows an open hole of more than 8500 feet.

Union Oil Is Active

Union Oil Company has become rather active throughout the state in the drilling of new wells in proven areas and tests in wildcat territory. In the Richfield district, one of the oldest in the Los Angeles Basin, the company has one well ready for a test on the Chapman lease and two new tests starting. Chapman 40 was recently completed for 246 barrels of 20 gravity clean oil. All wells on this lease are being completed in the upper producing zone. Union is preparing to complete Williams 4 on a lease southwest of Taft in Kern County at 1972 feet. Rig and machinery will be moved from Williams 4 to Keene 6 in the same area where the company has six producers, each of which had an initial of better than 500 barrels. Union Oil Company also recently completed Squires 16 in the Orcutt field for 108 barrels of 24.5 gravity oil. Depth is 3751 feet, which is the third zone.

Another most interesting test now being drilled by Union Oil Company is Bell 100 at Santa Fe Springs. This hole has reached a depth of about 9000 feet, and it is understood Union plans to drill this hole to 12,000 feet, unless production is found at a lesser depth. A string of 8⅝-inch casing was landed at 7427 feet and cemented through perforations at 6202 feet.

Six Drilling at Torrance

Six wells are drilling at Torrance in Southern California and two rigs are up for new holes. One hole stopped drilling at 4571 feet, ran 1520 feet of 6⅝-inch liner, including 210 feet of perforated, and is now being cleaned out preparatory for a production test. Chanslor-Canfield-Midway Oil Company's Del Amo 18 is drilling in sand and shale at 4340 feet. It is rumored this hole may be slated for a deep test.

Wilmington, a new field on the water front near San Pedro, has six active strings of tools, with 15 locations, rigs and foundations. It is likely fully 15 wells will be drilling in this field within the next three weeks. El Segundo, another new field in the Los Angeles Basin, has 12 wells actively drilling and two new rigs up.

CALIFORNIA

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
DOMINGUEZ—		
Shell, Reyes 88	165	6650
HUNTINGTON BEACH—		
Ensign Oil Co., Sun 10	300	3975
RICHFIELD—		
Standard, Kraemer 2-11	200	4710
Union, Chapman 40	245	3494
WILMINGTON—		
Geo. F. Getty, Wilmington 1	385	3580
Royalty Service Corp., Com. 1	210	3595
ROUND MOUNTAIN—		
Shamrock Pet. Co., No. 6	100	1561
California Western No. 21	215	1556
NORTH BELRIDGE—		
Belridge Oil Co., No. 1-12	4600	8510
No. 35-15	9775	8400
FRUITVALE—		
Meridan Oil Co., Dixon 1	340	3147
Omar Oil Co., Higgins 10	50	4164
Western Gulf, K.C.L. B-24	375	3985
KERN FRONT—		
National Oil Co., Inivers1 3	150	1986
MIDWAY-SUNSET—		
C. C. M. Oil Co., No. 25	225	2180
R. McGray, No. 1	300	2200
Standard, No. 28-3D	60	4007
MOUNTAIN VIEW—		
Buffalo Oil Co., Buffalo 5	600	4850
Standard, Mabry 2	525	4880
Hillman-Long, Whittaker 1	*	4773
Trico Oil & Gas Co., Wilson	*	4940
ADAM—		
Union, Mahoney 2	1360	4087
VENTURA AVENUE—		
Tide Water Associated, McGonigle 12	625	10569
KERN COUNTY—		
East Edison Oil Co., Tejon 1	*	1044
H. C. and E. A. Long, No. 1	*	960

*Failures; †Junked; ¶Million cu. ft. gas.

California's recent cold snap caused many freakish storms which covered various sections with hail or snow. Here is a picture taken at the Signal Hill camp of The Texas Company a moment after a hail storm had subsided. Note the ice on the lease houses and the thick coating on the foreground.

Illinois Strike

BIG WELL OPENS NEW FIELD IN NORTHERN MARION COUNTY

WEEKLY STAFF REPORT

Chicago.—The first important oil strike in Illinois in several years has been made in northwestern Marion County, and is expected to give impetus to the big leasing play that has been conducted recently. The discovery well is located on the western edge of a geological basin, west of the La Salle anticline in the south central part of the state.

The Adams-Louisiana Company and Felmont Corporation made the new discovery with Merryman 1 in the southwest quarter of 21-4n-1e, 1 mile from the little town of Patoka and 12 miles south of Vandalia. The well is estimated good for 600 to 700 barrels, although no open gauge has been taken.

The nearest production is six or seven miles south in the Sandoval field, which has been producing for 25 to 30 years.

Merryman 1 encountered the Stein sand, which carries water in most of the producing fields, at 1289-1305 feet, and it was saturated. However, the well was drilled ahead to the Benoist sand, which was encountered at 1391 feet and penetrated 27 feet before shutting down. The well was a fair natural pumper, but it was decided to give it a 10-quart shot. After the shot the well is estimated to have commenced flowing at the rate of 600 to 700 barrels daily through open 4-inch casing, but is now pinched in to 8 barrels hourly while tankage is erected. The oil is 38.9 gravity corrected, and brings a price of $1.23 a barrel at present. The Benoist sand is the same horizon productive at Sandoval.

Besides the important bearing the well will have on the leasing play, it has other interesting features. It is believed to be the first geophysical structure drilled and found productive in the state, being discovered by reflection seismograph operations.

The hole was drilled with a portable rotary, and probably is the first rotary test in this part of the country. George E. Failing of Houston, Texas, and Enid, Oklahoma, was the drilling contractor. Unusually fast time was made in drilling the well, which required but 18 days.

Merryman 1 is owned jointly by The Adams-Louisiana Company and Felmont Corporation, both of Houston, Texas. The two concerns have approximately 2000 acres in the immediate vicinity.

First Geophysical Prospect

In addition to this acreage, the two firms have leased considerable other land. They have approximately 10,000 acres in this part of Illinois, all surrounding "pimples" found by geophysical work. It is reported the concerns have discovered four other highs similar to the one producing at Patoka.

As stated previously, the Merryman strike at Patoka is believed to be on the west rim of the basin. In the basin proper, production is expected at much deeper depths, but some geologists had suggested that it would be best to start playing the rim and gradually work out to the deeper horizons (The Oil Weekly, October 19, 1936), and apparently The Adams-Louisiana Company and Felmont Corporation have proved the logic of this idea.

For approximately a year many shooting crews have been working the basin and the rim territory, and several million acres are said to have been leased. Among the major companies that have taken large amounts of leases are the following: The Carter Oil Company, The Pure Oil Company, The Texas Company, Gulf Oil Corporation, Magnolia Petroleum Company, Ohio Oil Company, Continental Oil Company, Mid-Continent Petroleum Corporation, and Shell Petroleum Corporation.

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EASTERN STATES
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
OHIO		
ASHLAND COUNTY—		
Ohio Fuel Gas, S. Thudium 1	*	....
Stewart & Co., Charst 2	*	582
LORAIN COUNTY—		
Edson & Son, Rueben Chester 3	*	2334
HURON COUNTY—		
McCorkill & Co., E. A. Morgan 1	3	772
Williams & Co., G. Roth 1	¶	550
MORGAN COUNTY—		
Ohio Fuel Gas, G. Lovell 4	¶	638
COSHOCTON COUNTY—		
Ohio Fuel Gas, Oka Black 1	¶	3287
Preston Oil Co., J. L. Myers 1	120	3035
MUSKINGUM COUNTY—		
Ohio Fuel Gas, Viola Baird 1	*	3452
E. H. Everett & Co., G. H. Varner 2	50	3185
Ohio Fuel Gas, Vera Redman 1	20	3894
KNOX COUNTY—		
J. B. Reed & Co., H. Body 1	¶	2673
LICKING COUNTY—		
Hope Const. & Ref. Co., O'Bannon 7	42	2929
Wehrle Gas Co., M. Showman 2	¶	2315
PERRY COUNTY—		
Ohio Fuel Gas, H. Beard 2	*	2962
ATHENS COUNTY—		
Ohio Fuel Gas, J. C. Burson 1	¶	1692
MEIGS COUNTY—		
Ohio Fuel Gas, E. Taggart 1	*	2020
A. N. Bengel, O. Cullums 2	¶	986
Stewart & Ross, D. Van Nest 1	*	1200
MONROE COUNTY—		
Stout & Shafer, F. Starkey 3	7	1690
NOBLE COUNTY—		
Larrick & Burns, H. W. Mason 2	*	1706
BELMONT COUNTY—		
E. M. Stepp & Co., Fred Groves 3	¶	712
WASHINGTON COUNTY—		
Oscar Rupple, Henry Rupple 1	1	1675
WEST VIRGINIA		
GILMER COUNTY—		
Ferrell & Cain, Stalnaker 1	¶	1921
CALHOUN COUNTY—		
Dunn Mar O&G Co., K. Chenowith 1	*	1890
MONONGALIA COUNTY—		
Convex Glass Co., T. Raber 2	¶	1118
KANAWHA COUNTY—		
Stacher & Co., G. W. Wolfe 2	*	1170
Columbian Carbon Co., J. Modley 1	¶	....
BRAXTON COUNTY—		
Pittsburgh & W. Va. Gas Co., W. Ramsey 2	¶	1883
CLAY COUNTY—		
E. and J. Reed, W. Goshorn 22	¶	2205
RITCHIE COUNTY—		
Sable O&G Co., Hall Hrs. 1	*	1658
MARION COUNTY—		
Monroe & Laughlin, S. Moore 1	¶	2693
WETZEL COUNTY—		
Union Gasoline & Oil Corp., George Sole 1	*	3226
ROANE COUNTY—		
L. Young & Co., B. Sheilds 1	¶	1489
PLEASANTS COUNTY—		
L. C. White & Co., R. H. Brouse 6	*	1640
TYLER COUNTY—		
C. L. Fetty, P. Boyle 1	*	957
UPSHUR COUNTY—		
Cumberland-Alleghany Co., C. Snider 1	¶	4450
INDIANA		
PERRY COUNTY—		
Charles Dice, Charles Kurtz 4	*	623
Dice & Zoercher, A. Franchville 13	3	517
Charles Wyman, I. Rissler 1	2	270
POSEY COUNTY—		
J. C. Ellis, E. and R. Stein 1	*	1930
RANDOLPH COUNTY—		
E. G. Henderson, J. E. Conklin 1	4	....
SPENCER COUNTY—		
Wynn Brothers, A. Holtzman 1	*	700
P. M. McMaham & Co., J. Stevenson 1	*	1166
KENTUCKY		
HENDERSON COUNTY—		
Ranger Oil Co. et al, C. M. Gish 14	15	....
McLEAN COUNTY—		
Powell Brothers, Henry Harden 1	*	....
E. P. Charlot, Livermore Theater Lot 1	*	....

Extensions Loom

TESTS SOUTH AND WEST OF CLAYTON DISCOVERY SHOW

WEEKLY STAFF REPORT

Mount Pleasant, Mich.—Commercial production from lower Dundee lime in west and south extension tests to the Clayton township (20n-4e), Arenac County, discovery well, was indicated this week. However, the prolific upper Dundee horizons of the discovery test so far have been missed.

James E. Duffy's Keef 1, Section 3, SW SE SW, logged Dundee at 2418 feet, about 30 feet higher on structure than the discovery a half mile east, and 173 feet in Dundee, or 2591 feet, where the test was bottomed, operators swabbed 23 barrels on January 23, and about 20 barrels the following day. Test will be acidized with 2000 gallons immediately.

Charles Weller's Crandall 1, NW SW NE, Section 10, a half mile south of the McClanahan-Seignious discovery, picked up the Dundee top at 2433 feet, and when 131 feet in the lime filled 5-inch casing 2000 feet with oil over a 4-hour period. Operators may drill deeper or treat with acid immediately .

Dundee Dry in Two Others

Meanwhile, Gordon Oil Company's Crandall 1, NE NE SE Section 10, and the same company's Mutch 1, NW SE NW Section 11, both important extension tests, were drilling in Dundee lime this week without showings in the upper zones.

The Clayton discovery had a commercial pay when 10 feet in the Dundee. It eventually took in 53 feet of the lime.

Five wildcat tests scattered over the state were slated for abandonment this week after failing to find commercial pay in Dundee lime. These included H. E. Bell's Killian 1, 25-17n-2w, Gladwin County; Taggart Brothers' Linemuth 1, 35-15n-9w, Mecosta County; M. J. Ingold's Donley 1, 31-22n-8w, Missaukee County; M. B. Keeler's Beall 1, 24-18n-9w, Osceola County, and Goll, Graves & Mechling's Mossner 1, 10-11n-6e, Saginaw County.

23 Drilling Permits Issued

Twenty-three drilling permits issued for the week pushed the January total to 62 to approach a record for this time of year in Michigan.

A new shallow sand gas testing play in the New Haven (10n-4e) Gratiot County district, accounting for 7 permits, along with 6 new starts in the new Buckeye Township (18n-1w), Gladwin County, and 4 in Clayton Township (20n-4e), Arenac County, made up the bulk of the activity.

A late semi-wildcat discovery in Michigan was made by J. V. Wicklund Development Company's State 1, shown here. The well initialed 1200 barrels from the Dundee lime at 3618 feet. Several wells are to be drilled immediately in this new Gladwin County area.

NEW SPACING RULE

Mount Pleasant, Mich. — Michigan Public Utilities Commission recently re-drafted regulations pertaining to natural gas industry to permit development on a basis of 1 well to 160 acres.

A new shallow sand gas field in Muskegon County is being developed on the new spacing pattern, which is the first in the state.

MICHIGAN
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
GLADWIN COUNTY—		
H. E. Bell's Killian 1, sw se sw, 25-17n-2w	*	3990
HURON COUNTY—		
C. W. Teater's Inda 1, se se sw, 32-18n-13e	*	2900
ISABELLA COUNTY—		
McClanahan Oil Co., Beutler 1, sw sw nw, 34-13n-6w	80	3653
Chartiers Oil Co., Gorr 1, se ne sw 6-16n-4w	*	4021
MECOSTA COUNTY—		
Taggart Brother's Linemuth 1, nw nw nw 35-15n-9w	*	3860
MISSAUKEE COUNTY—		
M. J. Ingold, Donley 1, ne ne ne 31-22n-8w	*	3990
OGEMAW COUNTY—		
J. W. Leonard, Heintz 4, sw nw ne 24-22n-1e	30	2710
M. J. Ingold, Zettle 2, se sw sw 13-22n-1e	45	2690
Durham & Jones, Allen 2, se nw se 20-22n-2e	35	2650
Morris-Barne, Golf Club 5, ne sw se, 20-22n-2e	90	2700
Kerr & Stanely, Fisk 4, sw sw sw 27-22n-2e	45	2705
Daily Crude Oil Co., Weeks 1, sw sw se 33-21n-4e	*	1350
OSCEOLA COUNTY—		
M. B. Keeler's Beall 1, c ne nw 24-18n-9w	*	3965
SAGINAW COUNTY—		
Goll, Graves & Mechling, Mossner 1, se sw nw 10-11n-6e	*	3290

*Failures; †Junked; ¶Million cu. ft. gas.

THE OIL WEEKLY REPORT ON IMPORTANT

Wildcat Tests

ARKANSAS

CLEVELAND COUNTY—J. R. Lockhart's Robertson 1, sw se 36-10-11, sd waiting orders 3205 ft.

DALLAS COUNTY—Walter Lawn's Atkinson 1, nw se 7-10-13, claim so td 2418 ft, arr to test.

GRANT COUNTY — Wallace & Staples' Davis 1, se sw 23-5-15, dr 2305 ft, last report.

HEMPSTEAD COUNTY—Root Petroleum Co.'s Jones 1, sw ne 16-13-23, sd 3740 ft. Drake 1, se nw 23-14-24, lcn. J. R. Birdwell's Duckett 1, 24-13-24, set 10 in csg, 100 ft, woc.

LAFAYETTE COUNTY—A. M. Neely's Meek 1, ne nw 35-19-25, sd 800 ft.

LITTLE RIVER COUNTY—J. G. Strahan's Dierks 1, 21-12-28, sd 1190 ft.

MILLER COUNTY—Joiner et al's Montana Realty 1, 3-17-28, 7 in csg 5270 ft, tested sw sd 5278 ft. C. V. Lenz's Dale 7, 24-15-26, 7 in csg 4280 ft, arr standardize, flowing est 24 bbls daily through open tubing.

NEVADA COUNTY—Axel Larson, Tr's J. T. Wortham 1, sw nw 29-13-21, mir. A. M. Lacey's Bennett 1, sw ne 28-14-22, mim. Benedum & Trees' Block 1, 9-14-20, fishing 3685 ft.

OUACHITA COUNTY—Lion Oil Co.'s Levy 1, 21-15-15, dr 1975 ft.

POPE COUNTY—Ark-La Gas Co.'s Smith 1, se se 10-8-21, dr 4350 ft.

PULASKI COUNTY—A. L. Kitselman's Fee 1, 2-1s-13, sd 792 ft.

SEVIER COUNTY—J. C. Binkley's Tabler 1, ne ne 14-10-29, dk pattern.

UNION COUNTY—Phillips Pet. Co.'s Morgan 1, 18-18-17, owdd td 4270 ft.

CALIFORNIA

FRESNO COUNTY

COALINGA—Hellman Anderson's No. 1, 15-24-14, dr shale 510 ft.

CANTUA CREEK—Gulf's S. P. Land Co. 3, 3-17-15, td 8531 ft, redr to 8500 ft, to set 7 in at 8454 ft.

KERN COUNTY

LERDO—Arkelo Pet. Co.'s Arkelo 1, 23-28-26, dr soft brown shale streaks sand 7855 ft.

RIO BRAVO—Tide Water Associated's K. C. L. 1, 30-29-25, dr shale 8186 ft.

SO. MARICOPA—E. A. Bender's Robinson 1, 14-10-23, td 1235 ft, plug 550 ft, to perforate. Trans-Line Pet. Corp.'s No. 1, 3-10-23, sd 662 ft.

GREENFIELD — British American's Smith 1-A, 21-31-27, sd 1128 ft.

GRAPEVINE—Buffalo Oil Co.'s Tejon 1, 5-10-19, sd 1745 ft. Ohio Oil Co.'s Title Ins. D-1, 21-11-19, td 6662 ft, oil showings 6640 ft to bottom, to set casing. Reserve Oil & Gas Co.'s Titchie 33-1, 33-11-19, td 6030 ft, plug 4990 ft, sd; Tejon 33-2, td 4505 ft, formation tester showed 500 ft muddy oil; Tejon 33-3, td 4431 ft, wocs 8⅝ in at 4380 ft.

SAN EMIDIO—I. L. Burch's No. 1, 3-10-23, sd 2460 ft. Union's No. C-1, 34-11-22, rur.

MOUNT POSO—Calcoast Oil Co.'s No. 1, 36-26-27, sd 2655 ft.

WASCO—Continental's K. C. L. A-1, 8-27-24, dr hard shale 8463 ft.

ROSEDALE—Continental's K. C. L. B-1, 12-29-26, foundation.

DEVIL'S DEN—Den Pet. Co.'s Bates 1, 20-25-19, sd 3100 ft. H. C. & E. A. Long's No. 1, 20-25-19, td 960 ft, abn. Lube Oil Co.'s No. 1, 2-25-18, dr brown shale 2536 ft. Carl A. Lundberg's No. 1, 20-25-19, lcn.

JASMINE—Doyle Pet. Corp.'s Quinn 1, 15-25-27, td 2956 ft, fsh; No. 2, lcn.

EAST EDISON—East Edison Oil Co.'s Tejon 1, 21-30-30, td 1044 ft, abn.

ARVIN AREA—General Pet. Corp's Arvin 1, 26-31-29, td 7462 ft, recement 8⅝ in at 6570 ft, to test. Superior Oil Co.'s No. 1, 26-31-29, foundation.

MOUNTAIN VIEW—Mohawk Pet. Co.'s Earl Fruit 3, 4-31-29, lcn abn, changed to No. 2; Earl Fruit 3, formerly No. 4, dr sandy shale 2420 ft.

KERN FRONT—Siskaylen Oil Co.'s No. 3-A, 17-28-27, td 2890 ft in os, to set casing, to test.

GOSFORD—Signal Oil & Gas Co.'s K. C. L. 1-A, 21-30-27, rur.

TEN SECTION—Superior Oil Co.'s K. C. L. 8, 11-30-26, dr hard sandy shale 10,100 ft.

MISCELLANEOUS

HUMBOLDT COUNTY—Texas Co.'s No. 2, 22-3-1, td 7125 ft, redr at 7091 ft.

KINGS COUNTY—Tide Water Associated's Avenal 2, 35-23-17, td 1029 ft, recemented 10¾ in at 937 ft, tenth time. A. S. Clare's Laymance 1, 20-20-22, rig. Dudley Ridge Dev. Co.'s No. 2, 24-23-20, foundation. Chas. Goodrun's No. 1, 24-23-19, dr sandy shale 1570 ft. Milheim Oil Corp.'s Resources 1, 20-22-22, sd 5810 ft. Pyramid Prod. Co.'s Spreckles 2, 16-24-18, lcn.

SAN BENITO COUNTY—Tide Water Associated's Murphy Ranch 1, 5-12-4, dr hard shale 5390 ft.

SAN JOAQUIN COUNTY—Standard's Tilden Com. 1, 31-2-5, dr shale 2592 ft.

SOLANO COUNTY—Amerada Pet. Corp.'s Drouin 1, 26-4-2, rur; Hoppe 1, 22-4-2, sd 7029 ft; Mayhood 1, 35-4-2, bldg rig.

TULARE COUNTY—J. W. Alford's Williams 1, 28-16-23, sd 1023 ft. R. R. Ellis' Ellis 1, 20-24-23, rig; E. P. Jennings' No. 1, 4-24-23, sd 2820 ft. Seaboard Oil Corp.'s Security 1, 16-23-26, dr sandy shale 2822 ft.

MONTEREY COUNTY—Amil A. Anderson's No. 1, 15-24-14, td 750 ft, rep roads. Shell's Branch 2, 34-24-10, dr shale 5968 ft. Texas Co.'s Dunphy 1, 30-19-7, td 1673 ft, fractured shale, lost circulation.

SAN LUIS OBISPO COUNTY—Aviation Oil Co.'s Brintnall 1, 10-11-35, dr Franciscan 1638 ft. Barnsdall's K.C.L. A-1, 1-32-20, rig. Cholame Syn's Jack 2, 10-25-15, sd 3648 ft. R. A. Foster's McKee 1, 2-32-23, td 5020 ft at last report. A. T. Jergins Trust's Indian Knob 1, 26-31-12, td 1438 ft, wocs 8⅝ in at 1436 ft. Union's Porter 1, 22-32-15, dr 4360 ft. United Foreign's Panorama 2, 2-32-21, td 2435 ft, last report.

SANTA BARBARA COUNTY

EL CAPITAN—Tide Water Associated's Edwards Estate 1, 2-4-30, td 2450 ft, plug 2330 ft, perforated, testing.

GATO RIDGE—Barnsdall's Tognozzini 6, 9-8-32, rig; No. 9, foundation. O. C. Field Gaso. Corp.'s Continental 1, 4-8-32, td 2004 ft, wocs 11¾ in at 1960 ft. Ben Moyle's Arrata 1, 9-8-32, sd 304 ft. Stewart-Carter Oil Co.'s McKenden 1, 4-8-32, dr shale 1830 ft.

SUMMERLAND—Julias Dietzman's Fithian 1, 8-4-25, sd 1025 ft.

LOMPOC—O. C. Field's Santa Rita 1, 11-7-33, sd 2064 ft. Top Row Oil Co.'s Spanne 1, 6-35, td 1310 ft, co.

CUYAMA—Daniel Fisher's No. 1, 28-11-28, sd, 650 ft.

CASMALIA—Valley Oil Co.'s Chief 1, 20-9-34, dr shale 630 ft. Todos Santos Oil Co.'s No. 1, 29-9-34, td 2365 ft, plug 1705 ft, sd.

BETTERAVIA—E. H. Moore's Union Sugar A-1, 25-10-35, td 8057 ft, cementing fish in place.

POINT CONCEPTION—101 Oil Co.'s Hollister 1, 35-5-33, sd 358 ft.

SANTA MARIA—W. D. Shaffer's Houk 1, 9-9-33, td 4237 ft, running formation tester.

VENTURA COUNTY

OXNARD—Vaco Oil Explor. Co.'s Calif. Lands 1, 6-1-21, td 2830 ft, plug 2150 ft, pulled electric heater, circulating hot oil.

VENTURA—Ventura Explor. Co.'s Sexton 1, 30-3-22, sd 9525 ft.

SOUTHERN CALIFORNIA

NEWHALL—Barnsdall's Rancho S. F. 1, 26-4-17, td 6215 ft, to set 8⅝ in at 6160 ft. Holbrook Pet. Co.'s Newhall Land & F. Co. 1, 28-4-16, td 4025 ft, to resume operations.

LYNWOOD—Calizoo Oil Co.'s Saulque 1, 9-3-13, td 3995 ft, dr pipe stuck, circulating.

NO. LONG BEACH—Geo. L. Clayton's Clayton 1, 32-3-12, sd 2130 ft.

FOX HILLS AREA—Country Club Oil Co.'s No. 1, rur.

EAST WHITTIER—Drillers Inc.'s No. 1, 22-2-11, td 156 ft, fsh.

MONTEBELLO—Danciger Oil & Ref. Co.'s Baldwin 1, 11-2-11, lcn. Honolulu Oil Corp.'s Core Hole 1, 14-2-12, abn, 4312 ft.

CLEARWATER—H. Heide's Rogers 1, 20-3-12, rur.

PUENTE—Honolulu Oil Corp.'s Butler 1, 15-2-10, dr shale 1590 ft.

WALNUT—Julian & Criswell's Langstaff 1, 5-25-9, dr shale and sandstone 1100 ft.

HERMOSA BEACH—Leora Oil Co.'s No. 1, 31-3-14, rur.

PALOS VERDES HILLS—McClaren Bros.'s No. 1, 27-4-14, td 3992 ft, plug 1420 ft, recemented 12½ in at 1077 ft.

ANAHEIM DIST.—Shell's Mathis 1, 23-4-10, bldg rig.

ROSECRANS—Shell's McKinley 4-1, 20-3-13, dr shale thin streaks of gray sand 6590 ft.

HAWTHORNE — Signal Finance Corp.'s Woods 1, 10-3-14, td 9395 ft, trying to locate water.

PALOS VERDES—So. Cal. Dr. Co.'s Birkhard 1, 1-5-14, dr hard shale 1320 ft.

DAVIDSON CITY—C. G. Willis' Flood Control 1, 11-4-13, dr brown shale 5824 ft.

ORANGE COUNTY—Mesa Oil Co.'s Mesa 1, 29-6-10, dr hard black shale 5050 ft. West Coast Ref. Co.'s Yorba 1, 25-3-9, dr sandy shale 3064 ft.

SAN BERNARDINO COUNTY—Equitable Explor. Co.'s No. 1 (Barshow) 11-10-5, td 3042 ft, plug 2545 ft, swabbing.

COLORADO

ARCHELUTA COUNTY—Oil City Petroleum and Archeluta Oil & Gas Co.'s Reeder 1, lot 5, 24-33n-2e, preparing to resume after being shut in for winter, td 1185 ft.

KIOWA COUNTY—Gulf Oil Corporation's Risser-Union Pacific 1, csw ne 1-17s-50w, dr 4615 ft in hard lime.

LAS ANIMAS COUNTY—Garcia Corporation's McClung 1, ne nw se 19-33s-61w, sd 1045 ft for 15-in csg.

MOFFAT COUNTY—Anderson-Kerr Drilling Co. and Phillips Petroleum Co.'s Government 1, cse se 19-9n-99w, spd.

MORGAN COUNTY—Swisher et al's Lunt 1, sw sw sw 3-4n-60w, sd 3960 ft.

PARK COUNTY—South Park Oil Co.'s State 1, se se sw 16-11s-75w, dr 5700 ft with 4½-in csg at 5690 ft; Lemarr 1, ne ne se 34-11s-75w, dr 3520 ft with 10¾-in csg at 3500 ft.

ABBREVIATIONS

The following abbreviations, signs, etc., are used in completions and wildcat reports in THE OIL WEEKLY.

**—dry hole abandoned well.*
‡—salt water (completions).
†—junked and abandoned.
¶—million feet of gas.
abd—*abandoned.*
bbls—*barrels.*
br—*building rig.*
b.s.—*basic sediment.*
csg—*casing.*
co—*cleaning out.*
dd—*drilling deeper.*
dk—*derrick.*
dr—*drilling.*
fsg—*fishing.*
ft—*feet.*
hfw—*hole full of water.*
in—*inches.*
lcn—*location.*
m—*milling.*
mim—*moving in materials.*
mit—*moving in tools.*
mot—*milling on tools.*
n, s, e, w—*north, south, east, west.*
oih—*oil in hole.*
owdd—*old well drilling deeper.*
owpb—*old well plugging back.*
pb—*plugged back or plugging back.*
r—*reaming.*
rog—*rig on the ground.*
rur—*rigging up rotary tools.*
rust—*rigging up standard tools.*
sd—*shut down.*
sdtr—*sidetracking.*
sg—*show gas.*
si—*shut in.*
so—*show oil.*
so&g—*show oil and gas.*
spd—*spudding.*
sr—*straight reaming.*
sw—*salt water.*
td—*total depth.*
ur—*underreaming.*
wih—*water in the hole.*
wo—*workover.*
wocs—*waiting on cement to set.*
wosr—*waiting on standard rig.*

KANSAS

BARTON COUNTY—Minnehoma O & G Co.'s Smith 1, nw nw ne 20-18s-13w, dr 3255 ft. Duee & Brouk's Baker 1, ne se sw 16-17s-13w, sd 2915 ft. I.T.I.O. Co.'s Schrepel 1, se se ne 26-20s-11w, dr 2145 ft. D. R. Buchanan et al's J. Schartz Jr. 1, nw nw ne 20-19s-11w, td 3465 ft. D. & A. Herndon Drlg. Co. & Morgan & Flynn's Robenseifer 1, cnw 7-18s-15w, spd & sd. Stanolind O & G Co.'s Riemann 1, sw sw nw 34-16s-13w, rur. Stanolind's Burmeister 1, ne ne sw 33-19s-11w, rur.

BUTLER COUNTY—Wixon et al's Coulter 1, nw sw ne 3-27s-7e, sd 3008 ft. Cox & McGinnis' Faulders 1, sw sw ne 27-25s-3e, dr 2000 ft.

CHAUTAUQUA COUNTY — Sagamore Oil Co.'s Kingston 1, ne ne nw 17-32s-10e, dr 1285 ft. Brosius et al's Morris 1, sw nw sw 6-32s-12e, set 6 in csg 1173 ft.

COWLEY COUNTY—C. H. Cross' Cook 1, sw sw sw 6-32s-6e, SR 6 in csg 2712 ft. Simpson Oil Co. & Stanolind's Weigle 1, sw sw ne 18-31s-6e, dr 2825 ft. W. M. McKnabb's Weldschmidt 1, sw sw nw 18-34s-6e, spd & sd.

DECATUR COUNTY— Winkler & Koch's Vessey 1, cnw se 26-3s-26w, cored 2930-39 ft, so.

EDWARDS COUNTY—Stanolind & Elwell's Donovan 1, cse se 14-25s-18w, co 4944 ft.

ELLIS COUNTY—Empire's Samuelson 1, ne ne ne 31-11s-16w, woc. Ted Kerr et al's Koblitz 1, se sw nw 23-12s-18w, td 3699 ft. Murphy Oil Co.'s Wiesner 1, se se sw 12-14s-19w, dr 1740 ft. Jones Bros. et al's Phillips 1, se se nw 9-15s-17w, ur 5 in csg 3493 ft. Lario O & G Co.'s Cress 1, ne ne ne 13-11s-17w, woc. Empire O & G Co.'s Hall 1, se se se 2-12s-17w, ur 15 in csg 757 ft. Winkler & Koch's Jensen 1, sw sw ne 3-13s-18w, spd & sd. Sunray Oil Co.'s Befort 1, ne ne ne 11-14s-20w, fsg 1315 ft.

ELLSWORTH COUNTY—Empire's Brown 1, se se nw 1-17s-9w, dr 3257 ft. Frost et al's Dolechek 1, ne ne sw 36-14s-8w, dr 450 ft.

HARVEY COUNTY—Saco et al's Guthrie 1, ne ne nw 8-22s-2e, sd. Harburney Oil Co.'s Schrag 1, nw nw se 24-22s-3w, sd 3537 ft.

KINGMAN COUNTY—Shell Pet. Corp.'s McMichael 1, cw½ w½ sw 12-27s-10w, dr 2015 feet.

LANE COUNTY—K. C. Bates' Bates-Nimocks 1, cnw ne 16-16s-28w, dr 3767 ft.

LOGAN COUNTY—Rosespring Drlg. Co.'s Wright 1, cse se 12-15s-35w, to skid rig.

LYON COUNTY—Clyde Fred et al's Bruce 1, nw nw nw 13-18s-10e, woc.

MITCHELL COUNTY—Geo. Siedhoff et al's Greiss 1, sw sw se 16-8s-10w, sd 2200 ft.

NESS COUNTY—Newton Dev. Co.'s Tenny 1, nw nw se 19-18s-25w, ur 8 in csg.

OSBORNE COUNTY—Helmerich & Payne's Hittinger 1, cse se 2-7s-11w, td 4110 ft, D & A.

PAWNEE COUNTY — Kessler & Their's Wallace 1, se se nw 16-23s-15w, dr 3130 ft.

PRATT COUNTY—H. V. Elwell et al's Fay 1, nw nw se 15-27s-14w, whipstock 2580 ft.

RENO COUNTY—W. E. Witt et al's Wright 1, se ne ne 9-23s-8w, dr 3500 ft. Helmerich & Payne's et al's Stewart 1, se se ne 16-24s-6w, dr 3608 ft. Clyde Pulse et al's Payne 1, sw nw ne 4-22s-7w, dr 2715 ft. Foraker et al's Hiett 1, se sw ne 34-24s-4w, sd 3845 ft. Helmerich & Payne et al's Evans 1, ne ne se 29-24s-6w, cel. Helmerich & Payne's Benson 1, ne ne ne 5-25s-6w, mim.

RICE COUNTY—Shell Pet. Corp. et al's Soeken 1-A, cnw 10-19s-9w, testing. I.T.I.O. Co.'s Fossey 1, sw sw ne 31-20s-10w, dr 2885 ft. Dickey Oil Co.'s Brothers 1, se se se 1-21s-7w, dr 3495 ft. Sage et al's Patton 1, sw sw sw 5-21s-7w, testing. Buckley's Bailey 1, sw sw nw 19-20s-6w, dr 522 ft. Empire's Banterton 1, se sw se 11-18s-8w, dr 1530 ft.

ROOKS COUNTY—Buckner & Schoff's McConnell 1, ne ne ne 34-6s-18w, ur 8 in csg 2645 ft. Snowden & McSweeney's Hindman 1, ce½ nw 35-7s-17w, set 5-in csg 3072 ft. Graham et al's Fike 1, sw sw sw 9-9s-17w, td 3296 ft. Basin Oil Co's Baxa 1, ne ne ne 23-9s-17w, dr 1235 ft. Jones Bros' Drlg Co.'s Wiss 1, nw nw nw 18-10s-18w, spd. Phillips Pet Co's Manquist 1, sw sw nw 9-9s-17w, brr.

RUSH COUNTY—Schoenfeld & Kitch's Winget 1, se se se 15-16s-16w, Pot, P. 797 bbls oil, 24 hrs, comp. Pigott et al's Maresch 1, cnw nw 28-19s-19w, td 4225 ft, D & A.

RUSSELL COUNTY—Empire's Frederick 1, se se se 18-15s-11w, td 3401 ft, D & A. El Dorado Ref Co's Scott 1, nw nw ne 17-13s-13w, sd 3443 ft. Thayer Drlg Co & Dee Miller's Cook 1, sw sw sw 10-13s-15w, dr 3205 ft. Empire's Vaughn 1, sw sw sw 17-14s-14w, sd 325 ft. Getty, Inc's Baxter 1, se se ne 8-15s-15w, co 835 ft.

SALINE COUNTY—James Brouk et al's Tehlander 1, ne nw se 10-16s-3w, PB td 3320 ft, D & A. Ryan Consolidated's Weurth 1, sw sw nw 28-14s-2w, dr 1400 ft.

SEDGWICK COUNTY—Cameron et al's Smith 1, sw se se 13-27s-2e, ru.

SHERIDAN COUNTY—O. A. Roberts et al's Corrick 1, cnw 34-9s-26w, sd 4663 ft.

STAFFORD COUNTY—Skelly Oil Co's Kipp 1, se se ne 27-25s-14w, to rig csg 3450 ft. Empire's Jordan 1, sw sw nw 15-25s-14w, cor. Skiles et al's Hughes 1, sw sw sw 12-23s-12w, sdo 3884 ft. Lebow et al's Wolf 1, se sw nw 3-21s-12w, td 3568 ft D & A. Stanolind O & G Co's Rosacker 1, sw sw ne 5-25s-11w, dr 4058 ft. Empire's O'Conner 1, ne ne ne 17-24s-15w, dr 1320 ft. Young et al's Murphy 1-A, se nw ne 32-21s-11w, sd 1110 ft.

SUMNER COUNTY—Rosespring Drlg Co's Rutter 1-A, cnw nw 21-33s-2e, flo 127 bbls oil & 25 bbls wtr. Empire's Hoffman 1, nw nw sw 27-34s-1e, dr 3949 ft. Lario et al's Hall 1, nw sw nw 11-35s-1e, dr 3665 ft. Frost, Study, Lloyd et al's Fee 1, se se se 31-34s-1e, dr 3885 ft. Orcott & Stewart's Newton 1, se se se 21-30s-2e, sd 930 ft. Wakefield & Mead Oil Co's Napp 1, sw sw nw 2-34s-5e, dr 1620 ft.

TREGO COUNTY—Black Gold Oil Co's Allman 1, csw sw 34-14s-21w, rur. Central Commercial's Burkett 1, csw 15-11s-22w, fsg 4100 ft.

WOODSON COUNTY—Ross & Marshall's Bresner 1, sw sw se 6-26s-16e, dr 1465 ft. Reamer's Corn 1, ne ne ne 31-26s-15e, sd 1706 ft.

SOUTH LOUISIANA

ACADIA PARISH—Humble's Nordyke 1, Ebenezer prospect, 23-10s-1e, dr shale 6850 ft. Superior's C. Savoy 1, Bayou Mallet field, 47-7s-1e, dr shale 7009 ft.

CALCASIEU PARISH—D. & D. Oil Co.'s Lutcher Moore 1, nw of Starks, 1-8s-13w, sd high water 1660 ft.

CAMERON PARISH—Magnolia's Grey 1, Johnson Bayou prospect, 8-15s-14w, dr shale 4396 ft. Pure's State Mallard Bay 1, Mallard Bay prospect, 22-13s-3w, dr hard shale 9409 ft.

EAST FELICIANA PARISH—Cavalier Oil Co.'s Mills 1, near Port Hudson, 58-4s-2w, dr shale 2527 ft.

EVANGELINE PARISH—Louisiana Crusaders Oil Co.'s Hatti Hass 1, ne of Pine Prairie, 2-3s-1e, building roads.

IBERIA PARISH—Texas Co.'s State Fausse Point 1, Fausse Point, 35-11s-8e, running csg 7157 ft; same operator's State Vermilion Bay, in Vermilion Bay, 20-15s-6e, dr shale 10,379 ft.

JEFFERSON PARISH—Triangle Oil Co.'s Carroll 1, 125-12s-11e, dr shale 2240 ft.

JEFFERSON DAVIS PARISH — Ameranda-Stanolind's Calcasieu National Bank 1, China prospect, 28-7s-3w, dr shale and sandy shale 7495 ft. H. M. Naylor's Johnson-Bourdreaux 1, South Jennings field, 39-10s-3w, dr shale 6290 ft. Shell's Sturdevant 1, South Roanoke prospect, 25-10s-4w, fsh 9749 ft.

LAFOURCHE PARISH—Fohs Oil Co.'s State Long Lake 1, in Long Lake, 65-17s-19e, driving piling. William Helis's City of New Orleans 1, Marchland prospect, 19-23s-23e, dr shale 7465 ft.

PLAQUEMINES PARISH — Tide Water's Manhatten Fruit Co. 2, Venice dome, 26-21s-30e, dr shale 6069 ft.

ST. BARNARD PARISH—Gulf's Lake Lery 1, Lake Lery prospect, 14s-14e, dr shale 4441 ft.

ST. LANDRY PARISH—Superior's A. Savoie 2, Cankton prospect, 26-8s-3e, dr shale 1180 ft.

ST. MARTIN PARISH—Shell's Hefea Land Co. 1, Gecho-Arnaudville prospect, 38-8s-5e, dr sand no show 9102 ft. Stanolind's N. Patie 1, Anse La Butte field, 46-9s-5e, running an electrical logging device 5500 ft. Texas Co.'s St. Martin Land Co. 9, Henderson prospect, 21-8s-7e, dr shale 6729 ft.

ST. MARY PARISH—Texas Co.'s Bayou Sale 1, Wax Lake prospect, 40-17s-9e, dr shale 10,180 ft.

TERREBONNE PARISH—Humble's Elender 1, Houma Gas area, 23-19s-19e, dr shale 6850 ft. Shell's Realty Operators 1-B, w of Houma, 18-17s-15e, dr shale 8923 ft.

VERMILION PARISH—Continental's Hebert 1, Abbeville prospect, 20-12s-3e, testing 12,210 ft. Drunella Oil Co.'s Caldwell 1, se of Abbeville, 11-13s-4e, woc 2000 ft. Stanolind's Fred Stovall 1, South Abbeville prospect, 89-14s-3e, dr shale and lime 12,009 ft.

NORTH LOUISIANA

BIENVILLE PARISH—Lide, Greer et al's J. D. Smelley 1, sw ne 13-16-5, tested sw 5923 ft, cor 6665 ft, base massive anhydrite 5640 ft. Texas Seaboard Oil Co.'s McGee 1, 3-16-6, td 7550 ft, wo 7 in csg.

BOSSIER PARISH—Ark-La Gas Co.'s Davis 1, 8-17-11, 7 in csg, 5144 ft, td 5192 ft, run tubing to test; Potter 1, 8-17-11, completed test, 25 mfg 4295 ft; Hardman 1, 6-17-11, mir. Haynes Drlg. Co.'s A. J. Murff 1, 35-17-12, mim. La. Pet. Corp's Edwards 1, 5-17-11, dr 3405 ft. Plain Dealing Synd.'s Bolinger 1, 36-23-12, cor 2805 ft. Triangle Drlg. Co.'s Skannal I-1, 22-17-12, running 7 in csg, td 5162 ft; H. L. Skannal H-1, sw sw 23-17-12, rur. United Gas' Freeman 1, 15-17-12, dr 5045 ft; A. C. Skannal H-1, 26-17-12, dr 2682 ft; Henderson 1, 36-17-12, 13⅜ in csg 330 ft, woc.

CADDO PARISH—Ferguson et al's Huckabay 1, 22-22-16, set 10 in csg 40 ft, drlg 630 ft. Gulf Oil Corp.'s E. P. Hatcher 1, 11-17-15, 7 in csg 8307 ft, woc. R. W. Norton's Payne 1, se se 27-23-16, 9⅝ in csg 6200 ft, dr 7754 ft (10,000 ft test),

CLAIBORNE PARISH—Max Hirsch et al's Ferguson 1, nw sw 29-22-6, dry on dst 4707-53 ft dr, 5022 ft. Ray Oden's Patton 1, 36-21-5, lcn. United Gas' Rufus Sims 1, sw nw 32-20-5, dr 5587 ft.

CATAHOULA PARISH—Balconies Oil Co.'s T. J. Chisum 1, 19-10-8e, rur. Matheny & Schumacher's W. S. Peck 1, 40-10-8e, mim.

DESOTO PARISH——Sundby et al's Garland 1, se nw 7-14-14, moving in heavier rig, at 3100 ft. Julian-Igoe Synd.'s H. Smith 1, se se 31-14-14, lcn. Grogan Oil Co.'s Ramsey 1, 36-11-11, arr deepen td 1780 ft. Sanders et al's L. N. Allison 1, 17-14-13, mir. Chamberlin et al's Lanier 1, 29-11-11, dk. Grady Vaughn et al's Sample 1, 24-11-14, temp abd 5575 ft, plan deepening to Travis peak.

NATCHITOCHES PARISH—Natchitoches Oil Co.'s J. S. Simpson 1, 12-7-7, arr to resume 1350 ft. Jack Lent et al's Locke 1, se sw 26-9-9, sd 50 ft. Robert Keen's Moffitt 1, 19-19-10, rur.

RICHLAND PARISH—Gulf Oil Corp.'s Rhymes 15, se se 32-17-6e, elev 87 ft, top anhydrite 2926 ft, base red beds 6380 ft, 7 in csg 8040 ft, dr 9035 ft.

SABINE PARISH—Earl Fox's L. B. Blankenship 1, 13-9-12, sd 1950 ft for fuel. Kirk-Greenway Co.'s (formerly Whitehurst et al) Whitney 1, section 8-9-13, cellar. A. C. Scott's Bowman-Hicks 1, 23-9-13, owdd td 2020 ft.

WEBSTER PARISH—Ohio Oil Co.'s S.T.D. Coyle 1, se sw 23-21-10, mir; A. J. Hodges 2, nw sw 23-21-10, mir. United Gas' Mixon 1, 22-21-10, wo 7 in csg. C. V. Davis 2, nw nw 23-21-10, ds stuck 8150 ft. Woodley Pet. Co.'s Gray B-4, dr 3310 ft. Magnolia's Cox 1, 23-21-10, top oil-gas sand 8088 ft, cor 8535 ft. Tide Water's L. Pipes 1, 10-18-10, sd for fuel 5799 ft. Standard of La.'s Fudicker 1, 2-17-9, cor 6220 ft. Red Hawk Oil Co.'s Baker 2, 9-22-9, drill stem stuck 2822 ft.

WINN PARISH—C. W. Cline's Collingsworth Hrs. 1, se se 14-10-6, dk & mir.

MONTANA

CARBON COUNTY — Bailey-Round Butte Oil Co.'s 2, w ne se 3-6s-23e, dr 1265 ft. George Muth and Fort Peck Association's 1, csl se se 23-6s-23e, dr 1510 ft.

FERGUS COUNTY—Emmons et al's 5, sw nw sw 24-22n-2e, dr 335 ft.

JUDITH BASIN COUNTY — Fletcher P. Hunt's Hobson 3, nw se ne 30-14n-15e, dr 1360 ft in Kootenai formation.

PARK COUNTY—Ben Ryan's Burgess 1, se sw nw 28-2s-11e, dr 621 ft.

PETROLEUM COUNTY—H. Clark Rowland et al's Kalispell 1, ne ne se 31-14n-25e, dr 671 ft.

PHILLIPS COUNTY—R. G. Parrent's Hartman 1, cnw se 12-24n-25e, dr 854 ft.

PONDERA COUNTY — Gordon Campbell's Hughes 1, nw ne nw 12-30n-4w, sd 3497 ft. Kirk Oil Co.'s Kellog 1, se nw ne 31-28n-4w, dr 2139 ft. Klinch Petroleum Co.'s Hollam 1, nw nw nw 21-28n-6w, dr 2298 ft.

MICHIGAN

ARENAC COUNTY—Petroleum Corp.'s La-Fave 1, sw sw ne 17-18n-5e, spd.

CASS COUNTY—L. T .Barber's Beebe 1, 3-5s-15n, lcn.

CLARE COUNTY—Wittmer Oil Co.'s Musgrove 1, 3-18n-5w, sd 1730 ft.

GLADWIN COUNTY — McClanahan Oil Co.'s Avery 1, 10-17n-1e, mim.

GRATIOT COUNTY—Chas. Anderson's Askergrad 1, 9-9n-1w, sd 521 ft. C. E. Bliss' Palmeter 1, 18-9n-1w, rig. C. E. Weller's Bolyard

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1, 27-9n-3w, dr 1900 ft. Sam Siegel's Kerr 1, 36-10n-1w, dr 2210 ft. H. B. Cowdry's DeVuyst 1, 11-10n-2w, rig. Herb Snell's Smead 1, 20-11n-4w, sd 3187 ft.

MONTCALM COUNTY — Chas. Weller's Herzog 1, 14-12n-8w, dr 610 ft. R. F. Ide's Mortonsen 1, 11-11n-6w, dr 3055 ft. R. E. Gallagher's Hayden 1, 25-11n-7w, dr 3190 ft.

OSCEOLA COUNTY — Dibble Brothers' Townsend 1, 5-20n-7w, dr 3700 ft. Osceola Oil Co.'s Gregg 1, 22-18n-7w, mim.

WASHTENAW COUNTY — Lee Brown's Kehrl 1, 12-1s-7e, dr 1500 ft. Ypsilanti Dev.'s Vorhees 1, ne ne se, 32-2s-7e, lcn.

WAYNE COUNTY—Darke Brothers' Truesdal 1, 25-2s-8e, lcn. Pontchartrain Pet. Co.'s Boynton 1, 27-4s-8e, dr 1100 ft. Wolverine Driller's Gardulski 1, 19-2s-9e, lcn.

MISCELLANEOUS: Clinton — Prima Oil Co.'s Fitzpatrick 1, 10-8n-4w, dr 2400 ft. Hillsdale—Hughes Heinig's Daley 1, 10-7s-4w, dr 1190 ft. Huron—C. W. Teater's Keller 1, 27-16n-11e, dr 2515 ft. Isabella—Burnstein Oil Co.'s Sherman 1, 1-16n-5w, sd 50 ft. Jackson—Morris Oil Corp.'s Peters 1, 23-2s-2e, lcn. Lake—R. B. Tamblyn's Cashion 1, 3-10n-9w, dr 510 ft. Missaukee—Rex Oil Co.'s Meekoff 1, 30-21n 6w, sd 760 ft. Otsego—Harley William's Raae 1, 15-30n-1w, sd 2286 ft. Tuscola—Smith Petroleum Co.'s Brink 1, 23-14n-7e, rig.

NEW MEXICO

LEA COUNTY — Anderson-Prichard Prod. Corp.'s C. M. Carlson 2, c sw nw 21-25s-37e, elev 3072 ft, shot 130 qts nitro 2878-2925 ft, est 150 bbls oil, testing. Baldridge et al's Blakey 1, c nw ne 5-20s-38e, elev 3586 ft, base salt 2660 ft, trace oil 4030 ft, dr 4155 ft. Jim Brown & Reynolds' Parcell 1, c nw se 8-21s-38e, elev 3573 ft, base salt 2820 ft, dr 3835 ft. C. L. Carlock et al's Quincy-Ricker 1, c se se 7-16s-36e, elev 3945 ft, top anhydrite 1975 ft, sd in lime 5062 ft. Amon G. Carter et al's E. M. Elliott 1, c nw nw 22-22s-37e, elev 3374 ft, broken pay 3550-3624 ft, flowed 30 bbls oil 12 hrs after shot with 2,500,000 ft gas; Eliott 2, c ne nw 22-22s-37e, elev 3375 ft, dr 3500 ft, C. & G. Oil Co.-The Texas Co.'s Ellen Weir 1, c ne ne 14-20s-37e, elev 3564 ft, td 4074 ft, sdo. J. C. Clower et al's W. H. Turner 1, c se se 29-21s-37e, elev 3469 ft, shot 300 qts 3695-3780 ft, est 75 bbls, running tubing to acidize. Continental Oil Co.'s M. E. Wantz 1, c sw sw 21-21s-37e, elev 3499 ft, td 3815 ft, set 2½ in tubing 3809 ft for test; J. M. Skaggs 1, c ne se 24-20s-37e, dk. Culbertson, Erwin & Stovall's J. R. Stuart-Repollo 2, nw se se 10-25s-37e, elev 3108 ft, pb fr 3277 ft to 3175 ft, bad hole; Stuart-Repollo 3, ne se sw 10-25s-37e, elev 3111 ft, lcn. Devonian Oil Co.'s A. L. Christmas 1, ne ne se 28-22s-37e, elev 3339 ft, shot 180 qts 3539-88 ft, td 3603 ft, swab and flow 35 bbls oil daily. El Paso Nat'l Gas Co.'s W. H. Harrison 1, c nw nw 7-25s-37e, dr 2690 ft; Harrison 2, c nw nw 29-24s-37e, elev 3290 ft, dr 2850 ft; Geo. W. Toby 1, c se se 12-24s-36e, elev 3322 ft, dr 2650 ft. Empire O & R Co.'s R. L. Brunson 1, nw nw se 4-22s-37e, elev 3446 ft, top anhydrite 1140 ft, killed 5,100,000 ft dry gas at 3600 ft. A. R. Eppenauer et al's F. B. Stuart-Amerada 1, ne ne ne 22-25s-37e, elev 3082 ft, top anhydrite 1000 ft, top salt 1200 ft, dr 2810 ft. J. E. Farrell & Co.'s E. W. Walden-Amerada 1-A, c sw nw 15-22s-37e, elev 3407 ft, sd for machine 3537 ft; Walden-Amerada 1-C, c sw sw 15-22s-37e, elev 3385 ft, dr by tools 3510 ft. Geo. F. Getty Oil Co.'s Etz-Conoco 1, c ne ne 12-21s-32e, elev 3822 ft, sd 1680 ft; D. C. Hardy 2, c sw se 20-21s-37e, elev 3497 ft, pay 3690-3800 ft, shot and used acid, complete flows 35 bbls oil and 3,500,000 ft gas. Harry W. Leonard et al's B. T. Lanehart 3, c ne nw 21-25s-37e, elev 3081 ft, lcn. Magnolia Pet. Co.'s E. O. Carson 3, c sw sw 28-21s-37e, elev 3467 ft, td 3775 ft, shot and used acid, complete flowed 80 bbls initial; Cary 2, c ne sw 21-22s-37e, rig; State 1-G, nw nw ne 24-17s-34e, elev 4019 ft, top anhydrite 1700 ft, top lime 4378 ft, top oil pay 4450 ft, dr lime 4477 ft with 700 ft oil in hole. Maljamar O & G Corp.'s Baish 8, c sw ne 21-17s-32e, elev 4022 ft, dk. Joe C. Maxwell, R. Crandall & C. H. Osmond's State-Lane 1, c sw nw 32-10s-34e, elev 4205 ft, top anhydrite 2060 ft, sul water 4809-4819 ft, dry and abnd. Plains Prod. Co. et al's Knight-Humble 4, c sw sw 22-24s-37e, elev 3225 ft, cem surface cas. Repollo Oil Co.'s O. J. Boyd 2, nw nw nw 23-22s-37e, elev 3338 ft, td 3700 ft, run tubing after shot; Fowler Hair 1, nw nw nw 9-24s-37e, mim; Robt. Jamison 2, sw sw nw 22-24s-37e, elev 3236 ft, cem 7 in cas 3085 ft. Rushwold Oil Co. et al's E. E. Carter-Conoco 1, c nw ne 30-20s-39e, elev 3559 ft, top anhydrite 1616 ft, base salt 2805 ft, dry and abnd 4711 ft. Samedan Oil Corp.'s S. B. Hughes 2, c nw se 4-23s-37e, elev 3318 ft, shot 250 qts nitro 3531-3612 ft, td 3625 ft, flowing 100 bbls, testing. Shell Pet. Corp.'s State 1-T, c se ne 34-20s-35e, elev 3719 ft, dry and abnd in sul water 4045-4195 ft; Jas Black 2, c sw se 21-24s-37e, machine. Skelly Oil Co.'s J. V. Baker 3, c ne nw 27-22s-37e, elev 3341 ft, shot 200 qts 3516-3600 ft, flowed 120 bbls oil 20 hrs; Ellen Sims 2, c sw ne 3-23s-37e, lcn; R. R. Sims 2, c ne sw 3-23s-37e, elev 3298 ft, sd 1196 ft; R. R. Sims 1-C, c se sw 3-23s-37e, elev 3297 ft, dr by bit 3390 ft. Stanolind O & G Co.'s Myers 1, c ne sw 22-24s-37e, elev 3256 ft, dr 880 ft. W. H. Street et al's Wood-Humble 1, near c se ne 22-22s-37e, elev 3355 ft, dr 3290 ft. Sun Oil Co.'s I. R. Stuart 2, c sw ne 15-25s-37e, lcn. The Texas Co.'s J. P. Alexander 1, c lot 14, 5-21s-37e, elev 3490 ft, dr 545 ft; Jas. F. Black 2, c ne sw 21-24s-37e, elev 3277 ft, mim; V. M. Henderson 1, se se ne 30-21s-37e, elev 3490 ft, broken pay 3680-3820 ft, shot and used acid, flowed 107 bbls oil initial ¾ in choke. Tide Water Associated Oil Co.'s Coates 1-B, c nw nw 21-25s-37e, elev 3073 ft, pb fr 3077 ft to 3029 ft, shot 160 qts 2917-3027 ft, testing; Ann Walden 2, c sw ne 21-22s-37e, elev 3360 ft, dr 455 ft.

ROOSEVELT COUNTY—Clovis Dev. Co.'s S. Smith 1, c se ne 17-2s-30e, elev 4597 ft, sd 1410 ft. Franklin Oil Corp. et al's Rual Giphant 1, nw nw nw 28-3n-30e, elev 4458 ft, sd 4290 ft. Joe C. Maxwell, R. Crandall & C. H. Osmond's A. B. Williamson 1, c nw nw 7-8s-36e, elev 4149 ft, shot 340 qts nitro 4687-4802 ft, td 4827 ft, dry and abnd.

OKLAHOMA

ATOKA COUNTY—A. J. Sander's Redden 3, se sw sw 19-1n-5e, sd 1190 ft.

BECKHAM COUNTY—Mid-American Oil Co.'s Biscoe 1, sw se ne 28-2n-22w, fsh 1310 ft.

CARTER COUNTY—Head & Straus' Simpson-Fell 1, nw nw se 8-5s-1e, td 1506 ft, to core. Lyle-Wham Dev. Co.'s Jackson 1, cne sw sw 26-5s-1e, mach on lcn.

CHOCTAW COUNTY—Cooper & Branstetter's Bell 1, cnw ne 29-6s-17e, dr 1080 ft.

CLEVELAND COUNTY—Helmerich & Payne's Glenn 1, cnw ne 6-8n-1w, dr 6712 ft.

COAL COUNTY—Continental's Kirby 1, sw se sw 23-1n-8e, dr 3942 ft. Continental's Breedlove 1, nw sw sw 24-1n-8e, dr 5956 ft; King 1, ne sw ne 26-1n-8e, to pip; Daniel 1, sw ne sw 27-1n-9e, testing. Carter's Warne 1, ne ne nw 31-2n-9e, pb 5450 ft, woc. Ruwaldt & Couch's McMillan 1, sw sw sw 10-1s-8e, dr 800 ft.

COMANCHE COUNTY—Frank Scott's Kuntz 1-A, cse ne se 21-4n-11w, dr 1852 ft.

COTTON COUNTY—Phillips Pet. Co.'s Warren 1, ne ne se 1-5s-13w, testing.

CREEK COUNTY—M. W. Mosier et al's Holcomb 1, se sw ne 19-18n-8e, sd 2870 ft.

GARFIELD COUNTY—Arab Oil Co.'s Harkendorf 1, ne ne ne 34-20n-3w, rog.

GARVIN COUNTY—Ellison & Hammond's Selby 1, cnw nw 24-2n-3w, to abnd.

GRADY COUNTY—R. E. Johnson et al's Thomas 1, se sw se 18-5n-7e, mir.

GREER COUNTY—Bud Lewis et al's Webster 1, sw ne ne 7-7n-24w, dr 2165 ft.

HUGHES COUNTY—T. P. McAdams & Barnes' Koch 1, sw ne ne 1-9n-10e, dr 4038 ft. Carson Oil Co.'s Lyter 1, ne nw sw 31-8n-12e, spd. C. J. Wrightsman's Diamond 1, ne ne se 33-9n-9e, cor 3331 ft. Mid-West Oil Co.'s Turner-Lucas 1, cse nw 13-9n-9e, td 2887 ft, est 4,000,000 c f gas.

JEFFERSON COUNTY—Buffalo Oil Co.'s Crown-Over 1, cse se nw 21-6s-6w, sd 230 ft.

JOHNSTON COUNTY—Patton et al's McCrummens 1, sw sw ne 16-1s-6e, dr 745 ft.

KAY COUNTY—G. A. Brown et al's Harris 1-A, sw sw ne 14-25n-1e, rust. Helmerich & Payne's Constant 1, sw sw ne 17-28n-2w, reaming 4265 ft. Ritz O. & G. Co.'s State 1, nw ne sw 16-29n-2w, rur.

KIOWA COUNTY—McWherter & Francis' Padgett 1, ne nw se 3-5n-17w, sd 511 ft. Argus Pet. Co.'s Osbourne 1, nw nw ne 9-7n-16w, co 1225 ft.

LINCOLN COUNTY—Mid-Continent Pet. Corp.'s Logan 1, ne ne se 31-11n-5e, to whipstock. Skelly Oil Co.'s Laughlin 1, cse nw 29-17n-3e, cor. Fleetborn Oil Co. et al's Turner 1, nw nw se 28-17n-5e, flo 25 bbls oil per day. Anderson-Prichard's Colon 1, nw se sw 28-17n-4e, dr 205 ft.

LOGAN COUNTY—Helmerich & Payne's Hasler 1, nw nw se 14-16n-4w, tools out, not plugged. Harry Blackstock's Prince 1, se ne sw 11-17n-3w, rur. Anthony & Marshall's Fruin-Eckman 1, se se sw 4-16n-1e, dr on iron 4959 ft.

LOVE COUNTY—Sinclair Prairie's Stockton 1, se se sw 26-6s-2w, swabbing. Magnolia Pet. Co.'s Gardner 1, cne ne nw 34-6s-2e, dr 6180 ft.

MARSHALL COUNTY—Stewart & Taylor's Chestnut 1, ne ne ne 23-8s-5e, sd 770 ft.

MURRAY COUNTY—Russell's Fee 1, se nw se 9-2s-3e, dr 930 ft.

OSAGE COUNTY—Norbla Oil Co.'s No. 1, ne ne se 13-23n-6e, dr 125 ft.

PAWNEE COUNTY—Forest Dev. Co.'s Otter 1, cne nw 15-21n-5e, cor 3614 ft.

PAYNE COUNTY—H. F. Young's Jenkins 1, se ne se 4-17n-3e, dr 4328 ft.

PITTSBURGH COUNTY—Okla. Dist. Co.'s Beeler 1, ne ne sw 7-7n-14e, milling 4525 ft.

PONTOTOC COUNTY—Ramsey Pet. Co.'s Johnson 1, nw sw se 9-3n-7e, pb 2390 ft. Delaney & Boettcher O. & G. Co.'s Alexander 2, sw ne sw 24-4n-7e, shot 4300 ft, one bailer oil & sw per hr. E. H. Moore's Muse 1, sw ne se 33-2n-7e, dr 2420 ft. L. K. Sandback et al's Whittaker 1, nw ne se 31-4n-6e, cel.

SEMINOLE COUNTY—Carter et al's Simpson C-48, sw sw ne 7-8n-8e, dr 2140 ft.

STEPHENS COUNTY — Coline Oil Co.'s Johnson 1, csw se nw 1-2n-8w, to test. Edwards' Frederick 1, ne se nw 31-2n-8w, fsh 2800 ft. Jack Cohen's Pierce 1, cne nw 24-2n-6w, sd 400 ft. Carter Oil Co.'s Harley 1, cne ne 24-2s-4w, bldg der.

TEXAS COUNTY — Allison & Barnhill's Bingley 1, sw sw ne 30-2n-18ecm, to pb & shoot.

TILLMAN COUNTY—I. T. I. O. Co.'s Hatler 1, csw ne 32-2s-17w, pb 4525 ft, set 7-in csg 4414 ft. Shirley Clum et al's Moriele 1, nw nw se 16-4s-14w, sd 230 ft.

WASHITA COUNTY—McWherter et al's Fee 1, sw sw sw 34-8n-19w, dr 1754 ft.

EAST TEXAS

ANDERSON COUNTY—Tom F. Hunter, American Liberty Oil Co. et al's G. E. Gage 1 (160-ac), C. Bird Gilbert sur, Blackfoot structure, elev 384 ft, cem csg 21 ft, preparing resume. Tide Water Associated-Seaboard Oil Corp.'s Monnig Bros. 7 (3806.82-ac), Simon Sanchez sur No. 1-11, Long Lake field Trinity test, elev 233 ft, dr 4769 ft. Comer E. Todd et al's W. T. Todd 1 (100-ac), A. B. Patton sur, Boggy Creek area, sd 2450 ft.

BOWIE COUNTY—Ferguson & Hill's A. Y. Breckenridge 1 (412-ac), Nancy Dycus sur, 4 mi w Texarkana, top Nacatoch sand 740 ft, top chalk 1308 ft, sd 1960 ft. Woodley & Bentley's J. D. Lumpkin 1 (245-ac), John McDermott sur 1¼ mi sw Dalby Surings, elev 290 ft, Annona chalk 1665-2090 ft, sd 4404 ft.

DALLAS COUNTY—Mauldin Oil Co.'s W. E. Howell 1 (107.7-ac), S. Layton sur, rig.

DELTA COUNTY—F. J. Estes et al's W. S. McGee 1 (207-ac), J. G. Oliver sur, 2 mi sw Klondike, elev 449 ft, dk. W. S. McGee et al's Mrs. P. W. Miller 1, (52-ac), E. Spencer sur, 1 mi sw Cooper, elev 465 ft, top Woodbine Red Beds 2650 ft, top Georgetown 3040 ft, sd 4220 ft.

FALLS COUNTY—J. Edward Mills et al's Sam Grucholski 1 (40-ac), Dennis Harold League, 5 mi sw Kosse, elev 521 ft, top Edwards lime 3867 ft, top upper Glen Rose 4074 ft, sd 4114 ft.

FREESTONE COUNTY—C. A. Everts et al's O. W. Killam 1 (840-ac), John Robbins sur, 6½ mi se Fairfield, Red Lake area, elev 368 ft. Pecan chalk 3505-3650 ft, sd account high water, td 4050 ft. Fred R. Lovering et al's E. Bonner-Scott 1, (23-ac), H. Awalt sur, 7 mi n Fairfield, Pecan chalk 2175-2286 ft, top Austin chalk 3117 ft, sd 3870 ft.

GRAYSON COUNTY—Olson Drlg. Co., Jas. H. Gardner, Broswood Oil Co. et al's D. R. Utiger 1, (160-ac), P. P. Cady sur, 5 mi nw Denison, elev 722 ft, show o & g in Trinity

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860-890 ft, base Trinity series 930 ft, top Woodford chert 955 ft, top Viola cherty-lime 1570 ft, top Stringtown shale 1854 ft, top lime 2415 ft, dr 3130 ft.

HOPKINS COUNTY—Empire O & R Co.'s J. E. Worsham 2 (149.36-ac), A. O. Wetmore sur, Sulphur Bluff area, elev 436 ft, Pecan chalk 1510-1580 ft, top Woodbine 3250 ft, top Georgetown 3620 ft, top Paluxy series 4444 ft, pay 4474-4525 ft, flowed 45 bbls per hr natural; Worsham 3, rur. Walter L. Goldston & Frankel Bros' H. J. Smith 3 (450-ac), Jas. A. Craft sur, elev 436 ft, top Fredericksburg lime 4250 ft, cut fault 4250 ft, oil pay 4432-4505 ft, testing; Smith 4, mim. D. S. Hager and W. P. Luse's J. G. Reynolds 2 (200-ac), A. C Wetmore sur elev 426 ft, Pecan chalk 1405-75 ft, top Woodbine 3140 ft, top Georgetown 3904 ft, Paluxy pay 4510-4535 ft, flowed 41 bbls per hr initial. D. S. Hager, Luse and Russ Pet. Co.'s J. E. Worsham 8 (192.26-ac), A. O Wetmore sur, elev 442 ft, Pecan chalk 1513-1600 ft, top Georgetown lime 3625 ft, top Paluxy series 4474 ft, pay 4542-4563 ft, flowed 6 bbls per hr initial; Jeff M. Worsham 2 (39.82-ac), A. O. Wetmore sur, Pecan chalk 1525-1628 ft, top Georgetown 3950 ft, cut fault 4000 ft, top Paluxy series 4440 ft, pay 4490-4500 ft, shale to 4561 ft, testing. F. D. Jones Drlg. Co. et al's Mrs. J. K. Pierce-Gulf 3 (225-ac), Jas. A. Craft sur, rur. Shell Pet. Corp's J G. Reynolds 1 (200-ac), A. O. Wetmore sur, mim.

HOUSTON COUNTY — American Liberty Oil Co. et al's J. A. Bean 1 (61-ac), Green Evans sur, Grapeland area, rur. A. D. Hudspeth & Sunray Oil Co.'s A. B. Spence 1 (291.2-ac), Collin Aldrich sur, 2 mi sw Grapeland, rur. E. R. Mount, Branch et al's Dr. P. S. Griffiths 1 (136-ac), Frank Johnson sur, 3 mi sw Crockett, sd 700 ft. Ridgeway & Jackson's H. F. Moore 2 (53-ac), H. Mester sur, 2 mi se Crockett, dk.

HUNT COUNTY—Penn Oil Corp.-Elmer S. & Fox Wood's A. B. Manning 1 (57½-ac), Sally Owens sur, 5 mi ne Lone Oak, elev 599 ft, dk abn; A. B. Parrish 1 (200-ac), N. Danley sur, dk. Stanolind O & G Co., M. J. Delaney et al's L. B. Moore 1 (92-ac), R. Ragsdale sur, 2½ mi w Campbell, lcn. Superior Oil Co. (Cal.) Moncrief & Showers, Inc., Ed Hyde & W. L. Pickens' P. B. Paul 1 (160-ac), Mary Latham sur, 5 mi ne Quinlan, Trinity test, elev 489 ft, dr 3610 ft. Texola Land Corp.'s J. M. Goin 1 (250-ac), Jas. Merrick sur, 2 mi sw Wolfe City, sp & sd.

LAMAR COUNTY—H. Salmon, Lowery & Cutler's E. C. Porter 1 (30-ac), Thos King sur, 3 mi ne Chicota, elev 421 ft, Woodbine series 168-242 ft, top Georgetown lime 354 ft, sd 2500 ft.

KAUFMAN COUNTY—J. M. Scott & J. B. Woodside's W. & T. Nash 1 (576-ac), Juan Cortez sur, 1 mi e Scurry, lcn.

LEON COUNTY—H. M. Ogg et al's O. Wiley 1, E. Devinney sur, 1 mi w Buffalo, dk.

LIMESTONE COUNTY—A. W. Phillips, J. Johnson et al's E. M. Speight 1, (136½-ac), M. Herrin and Pedro Varella sur, 4 mi ne Groesbeck, elev 415 ft, Pecan chalk 2450-2520 ft, Austin chalk 2720-3003 ft, fsh 3680 ft.

RAINS COUNTY—Humble O & R Co.'s O. L. J. Easter 1 (39¾-ac), R. Hotchkiss sur, 4½ mi e Emory, elev 438 ft, Pecan chalk 2185-2435 ft, Austin chalk 3424-3745 ft, top Woodbine 4225 ft, top sand 4380 ft, top Washita 4970 ft, top Georgetown 5003 ft, top Paluxy series 6079 ft, tested water, top upper Glen Rose lime 6347 ft, top anhydrite 6985 ft, base broken anhydrite 7585 ft, cored salt water in gray sandy-lime 7739 ft.

RED RIVER COUNTY — Carpenter Oil Corp.'s R. E. Anderson 1 (100-ac), S. W. Sims sur, 3 mi n Clarksville, elev 459 ft, top Red Beds 1250 ft, top Paluxy series 1845 ft, sd for heavier rig to dd, td 2018 ft; J. M. Roberts 1 (100-ac), John Ware sur, mim. Roy I. Carter Drlg. Co. et al's J. A. Tutt 1 (40-ac), Dennis Harty sur, 2 mi s Avery, elev 440 ft, sp and sd. M. Petroff et al's R. C. Morris 1 (176-ac), Joseph Guest sur, 2 mi w Detroit, sp & sd. Dale Sneed, R. H. Manning & Texfornia Co.'s Hooker-Hughes 1 (80-ac), MEP & P Ry sur, No. 642, 6 mi sw Lydia, elev 297 ft, Pecan chalk 995-1302 ft, top Austin chalk 2018 ft, sd 2720 ft.

ROBERTSON COUNTY—J. Edward Mills et al's Tony Congelosi 1 (75-ac), Geo. A. Nixon sur, 3 mi sw Hearne, jkd 2250 ft, skid rig.

TITUS COUNTY—J. V. McMahon, Geo. H. McIntyre et al's John B. Stevens Jr. 1 (777½-ac), J. Muechen sur, 7 mi sw Mount Pleasant, elev 349 ft, Pecan chalk 2290-2600 ft, lost drill pipe, sd 5051 ft.

VAN ZANDT COUNTY—American Liberty Oil Co.-Geo. Greer's J. A. Freeman 1 (92½-ac) John Walling sur, se edge Van field, rur. Stroud & E. N. Lowe's P. L. McNeill 1 (104-ac), J. W. Guest sur, 4 mi n Ben Wheeler, sp & sd.

WOOD COUNTY—G. W. Nix et al's Mrs. E. A. Russell 1, John Delap sur, 4 mi w of Golden, sd 600 ft.

SOUTH TEXAS

ARANSAS COUNTY—Atlantic's McCampbell Ranch 2-C, lot 9, sec 40, McCampbell Ranch subd, McCampbell area, set csg on btm, td 6550 ft, testing. Barnsdall's Kate Edwards 1, outlot 87, Lamar townsite, Wm. Lewis sur, ab 96, 9 mi ne Rockport, reaming rathole 7623 ft. W. J. Collins & Broughton Wilkerson's McCampbell Ranch 1, blk 10, McCampbell subd, McCampbell area, material on ground.

ATASCOSA COUNTY—Frontier Oil Co.'s Oppenheimer 1, 193.4-ac tr, J. Sharp sur No. 518, 6 mi s Lytle, sd 2395, weather. Heirholzer Bros. No. 1 Fee, 330 ft swl & sel of J. Pointevant sur No. 5 se of Campbellton, sd 509. Helvetia Oil Co.'s Susie Pratt 2, 176-ac tr, F. de la Garza sur, Anchorage prospect, ½ mi se Pratt 1, top serpentine 3085 ft, soft broken serpentine 3224-66 ft, top Austin chalk 3428 ft, pb 3250 ft, perf liner 3150-3208 ft, apparently poor shot, washing down after shooting with 200 lbs 90 percent nitro at 3145-75, swabbing showing distillate. J. R. Hinton's G. F. Weigand 2, A. S. Donnivan sur, 660 ft se No. 1, dr 110 ft. L. G Priest Tr.'s John Sanders 1, 117.61-ac tr, J. P. Garman sur No. 1189, sd 1610 ft. R. J. Roberts' J M. Elder 1, 330 ft nel & nwl of tr Dan Brewster sur No 190, 8 mi ne Campbellton (lcn corrected), ru for 3800-ft test.

BANDERA COUNTY—A. T. Crane et al's R. B. Watson 1, A. C. Curver sur No. 71, 2 mi n Medina City, td 2035 ft, sd.

BASTROP COUNTY—Joe E. Mills' Chas. W. Eskew 1, 398.5-ac tr, Samuel Wolfenberger sur No. 18, td 2904, still sd after pb to 2458 ft.

BEE COUNTY—Benson & Jones' G. A. Ray 1, 40-ac tr, Anna Burk sur, 3 mi e Beeville, coring 4953 ft. W. C. McBride Inc.'s Brown & Hanson 1, 1850 ft nwl, 305 ft nel of W. H. Harrell sur A-501, mim. Two Rivers Oil Co.'s A. Hartzendorf 1, center lot 6, A. Hartzendorf subd, G. A. Kerr sur, 940 nw Hartzendorf's Fee 1, 1 mi n Pettus, dr 3560 ft.

BEXAR COUNTY—Algra Oil Co.'s Edward C. Peters 1, Miguel Gotari sur 5, sec 4, 13 mi se San Antonio, still sd 670 ft. American Gas Co.'s Oliver 5, 400-ac tr, M. F. Rodriguez sur, Gas Ridge, sd 3415 ft, hfw. W. D. Bacon et al's Ida Mae Seffell 1, 29-ac tr, Jose Arocha sur, 2500 ft n Cooksey pool, 1100 ft se Meaders prod, sd 1060 ft for repairs. Albert Chmel's Theresa McIntosh 1, 274-ac tr, J. W. Garrity sur No. 19, ¾ mi se Kirby, dr 685 gumbo. J. H. Devine et al's Victor Galla 1, 100-ac tr, Jose Bustillor sur No. 29, 1½ mi e Hange & Donnell's Mahula 1, sd 460 ft, 6⅝-in csg 450 ft, d & a 508 ft. D. K. Oil Co.'s Earl Baker 1 (was Caruth), F. Rolen sur, td 650 ft. set 6-in csg 542 ft, dr ahead 671 ft; J. F. & F. X. Bilhartz 1, 382-ac tr in F. Rolen sur 48, 1 mi s of Von Ormy, wor 40 ft. Woodward, Hardie & Herrold's Herman Sons 1, 2019-ac tr, Henry Pace league, sur 37, tr 9, Swearingen, Cassin & Tayloe subd, 28 mi s San Antonio, td 1720 ft, still bldg dk & ru.

BROOKS COUNTY—Standard Oil Co. of Texas' Mestena O. & G. Co. 1, Alta Mesa area, B. Garcia tr 5, La Mestena de Gonzalina gr, td 3588, dst 3574-88, rec 360 ft oil 70 lb pres, 10 min, ¼ and ⅜ ch, set 7-in csg 3572 ft, sand 3570-88, flowed 353 bbls oil, 49 bbls bs&w 24 hrs ⅛ ch. Douglas & Burden Inc.'s M. A. Faller 1, G .M. Laughlin sur No. 434, Alta Verde, 1½ mi se prod, td 1000, sd. Texas Gulf Producing Co.'s T. S. Proctor 1, 330 ft sl & el blk 2, sec 20, Los Olmos Y Loma Blanca sur, 2 mi s Falfurrias, mim.

BURLESON COUNTY—Red Bank Oil Co.'s Nellie Gramm 1, Elisa Santef sur, td 6241, set cement plugs at 3600 perf 7⅝-in csg 3428-78, test sw with little o & g, abnd.

CALDWELL COUNTY—Brown Drilling Co.'s W. J. Pope 2, Salt Flats area, John D. Rains sur, 8 mi se Lockhart, lcn; G. M. Blackwell 1, John Roe sur, 1500 ft. Grayburg's Blackwell 1, 7 mi sw Lockhart, td 2191 ft, comp on pump est 30 bbls day. Easton & Manning's W. E. Laeler 1, 126.8-ac tr, Pinchback sur, 2 mi sw Buchanan pool, dk. C. A. McDonald's F. Tinkle 1, S. Seal sur, prep sp. McKenzie's J. M. Pierce 1, S. Seal league, s of Luling, Dunlap area, dr 1345 ft. Mrs. E. B. Whittington et al's Sam McMahan 1, James Pinchback sur, 50-ac lse, 1 mi sw Buchanan field, sd. R. George Young, Trustee's Lena Schmidt 1, W. C. Williams 1/3 league, 3 mi w Lockhart, sd 1362 ft.

CALHOUN COUNTY—Mills Bennett's J. W. Williams 1, 467 ft out of s cor 217.2-ac tr, lot 2, M. Lopez sur, 2⅝ mi e Green Lake, dr 4240 ft.

CAMERON COUNTY—Stapper Pet. Corp.'s

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Port Isabell I. R. R. Co., 660 ft e, 330 ft s of center blk 17, Port Isabell I. R. R. Co. subd, Espiritu Santo gr, sh 29, 30, 31, 15 mi nw Port Isabell, dk & rig up for 8500-ft test, Osage Dr. Co., contractors.

DUVAL COUNTY—Argo Oil Co. & Clopton's Smith-Corkill 2, 330 ft nwl, and swl of e¼ of e¼ sur 498, mim. A. J. Brinkoters' State 1, sur 215, ½ mi s of Field, sd 1200 ft. N. V. Duncan's Worden & Drought 3, G. C. & S. F. sur 151, gas sand 1504-12, oil sand 1531-37, dst 1518-37 ft, rec 500 ft plo, with blow of gas 50 min, ⅜-in ch top & bottom, dr plugs. Gilcrease Oil Co. & Graham's M. S. Escobar 1, blk 4, sec 2, 829.5-ac tr, Juan Jose Manuel de la Garza Falcon gr, Buffalo Tex. subd, 2 mi sw Premont area, d & a 4258 ft. Hiawatha O. & G. Co.'s Southland 1, sec 15, Agua Poquita gr, 6 mi s Benavides, td 5867, will dr plugs, sand 5845-67, dst rec 665 ft plo 35 lbs pres ⅜ chokes 15 min. Magnolia's A. L. Labbe 1, 990 ft sl & wl of sec 1, sur H&N RR Co. 1 mi n Labbe field, dst 2904-10, show 10 min, 290 ft plo, ⅜ chokes, 7-in csg 2904, dr plugs. Oliver Oil Co.'s K. Shaffer 1, s¼ sur 146, td 400, sd for water.

EDWARDS COUNTY—Plateau O. & G. Co.'s Mrs. R. L. Hatch 1, J. W. May sur, sec 66, HE&WT RR sur, td 4750 ft, may deepen to Ellenberger about 5000.

FAYETTE COUNTY—McNeil Pet. Co.'s V. Dybala 1, A. Thompson league, still not yet ru.

FRIO COUNTY—Amerada's Halff & Oppenheimer 7, E. J. Gilman sur, Pearsall, td 5573 ft, sd; Halff & Oppenheimer 8, San Antonio Ditch Co. sur No. 1104, Pearsall, td 6230 ft, 5½-in tubg bridged while cleaning through ⅛-in ch, show wash water & scum oil, built up 2400 lbs pres, prep swab through tubg to break bridge.

GOLIAD COUNTY—Sun's Lena Fromme 2, L. Fulton sur 15, 3000 ft e No. 1, 10 mi n Goliad, dr 3420 ft. R. B. Swiger's Carrie Wood 1, blk 23, Swiger subd, Wood Ranch, George Villa sur, 15 mi s Goliad, 2 mi e Keystone's Wood 1, due sp 1-25-37.

GONZALES COUNTY—Victoria Dr. Co.'s (M. S. Holliday et al) T. G. Edwards 1, W. W. Pace 1/3 league, blk "A," Holliday subd, 2 mi sw of Cheapsides, dr 1125 ft.

GUADALUPE COUNTY—J. E. Clark et al's Adolph Grim 1, Green DeWitt sur No. 13, ½ mi sw prod, td 2619, Austin chalk 2609-19, hard & dry, d & a. Louis Crouch et al's Mary King 1, 80-ac lse, J. D. Clements sur, ¼ mi se Zoboroski area, dr 1525 ft. Felmont Oil Corp.'s Chas. Williams 1, 474 ft wl of 227-ac tr, 188 ft s Guad. River, Jesus Cantu sur, 3 mi se Seguin, revised lcn, sp. La Jita Corp.'s Dan Denman 2, Wm. Arrington sur, mir. W. W. Lincoln et al's A. Baenzinger 1, 125-ac tr, A. Mansola sur, Salmar area, 6 mi s Seguin, td 1988, chalk 1780-1930, 5½-in csg 1802, swabbing. Long & Ross' Ed Felix 1, 1½ mi s fr New Berlin, 75-ac tr, V. Duran sur, td 634 ft, sand 625-26, sndy 626-34, oil show, sd. Nick Marosis et al's Wm. Maierhofer 1, 100-ac tr, L. A. Peters sur, 12 mi sw Seguin, sd 1935 ft. J. B. Stoddard et al's Eliza Harris 1, Green DeWitt sur No. 11 (200 e of Crk) in old Sal Mar field, sd 600 ds, has gas show. W. J. Walton et al, Martin Hoffman 1, in Green DeWitt sur No. 1, mi ne of Zoboroski field, td 2665, laying water line prep to reworking.

HAYS COUNTY—Mallory-Holcomb & Nance's J. A. Hudenrich 1, 496-ac tr in W. Hemphill sur, 2 mi se of Kyle, lcn.

HIDALGO COUNTY—Pantano Oil Co.'s James McDougal, ran electrical formation tester, show sands 7994-8045 ft, 7845, 7915, 7750-60, 7720-25, set csg to btm at 8067 ft, perf 7867-75, flowing wash water, some distillate, considerable gas, ⅛ ch, tp 2750 lbs, cp 2600 lbs. Dayle L. Smith Oil Co.'s Fairbanks & Young 1, blk 44, porc 46, 4 mi e Samfordyce field, td prep to re-dr, sd 2006 ft. Sterling O. & R. Corp.'s J. C. Engelman 1, 660 ft nl, 330 ft el lot 5, blk 5, M-T L & I Co. subd, ¾ mi e Pantano crater, sp & dr ahead.

JIM WELLS COUNTY—Danciger Oil & Ref. Co.'s J. W. Bird 1, 425-ac tr, Los Presenos de Abajo gr, 1 mi w Bentonville field, dr water well. J. I. Francis & L. Simonton's A. Lozano Jr. 1, lot 111, sec 76, Holderman subd of Seeligson Ranch, 4000 ft sw Graham No. 1 Bennett, sd 2410 ft, may deepen. Gist & Graddy's B. W. Ownes 1, Frank sur No. 152, but in Poitevent sur, 1½ mi se Alfred, 3 mi n field, abnd 5308 ft, will skid 50 ft for new hole. W. F. Morgan's Laughlin 1, lots 39 and 42, sec 72, Holdeman subd, S. K. & K. sur No. 231, making dst 2249-56. George E. Smith's W. D. Wade 1, W. H. Bode subd, Wade Ranch, Jean Gert sur, abnd 4570 ft Stanolind's Richard King 3, sec 20, but sec 9, Richard King subd, 1 mi n Bentonville field, dr 5444 ft.

JIM HOGG COUNTY—French Oil Corp.'s Paula V. De Garza 1, sur 269, e of Alworth pool, dr 1240 ft. Gifford Oil Co.'s Armstrong 1, sur 43, ru. J. H. Meek Jr.'s Martinez Est.. 3-A, sur 623, 1320 ft w of No. 1-A, coring 2990 ft.

KARNES COUNTY—De Graffe & Reel's Cochran 1, McConnel league, 5 mi ne Riddleville, sd 200 ft, drop until work resumes. Victoria Dr. Co.'s John Yanta 1, 2200 ft el, 400 ft nl of S. G. Hardaway sur, 2 mi e Helena, ru.

LAVACA COUNTY—Willshire Union Oil Co.'s Albert Pohl 1, 120-ac tr, W. Wooten sur, 7 mi nw of Ezzell, dr 1900 ft.

LEE COUNTY—James E. Pederson's C. A. Turner 1, D. Hudson sur, 1½ mi se Tanglewood, td 6560 ft, dr 6008 ft in sdtr hole.

LIVE OAK COUNTY—Dirks Bros. & Ohio Fuel Oil Co.'s Kokernot & Dillworth 1, 150 ft sl & el of 40-ac lse, 883-ac tr, Refugio County School Land sur No. 6, 2½ mi ne Oakville field, ru. McMurray Dr. Co., contractor, R. H. Feltner's Sanger Ranch 1, G. C. & S. F. sur No. 385, lcn. Hagan & Stewart's S. S. Joint Stock Land Bank 1, J. Turner sur, 5 mi e & n of Three Rivers, coring 1300 ft. Henderson Coquat's Rocky Reagan 1, Santiago McGlorin sur, dr 1810 ft. Loma Oil Co.'s 1, C. H. Reagan, John Turner sur, 1182-ac tr, 1 mi e Hagan & Stewart stk bank, abnd 1620 ft. Ohio Fuel Supply Co.'s W. W. Goebal, H. J. Rosebrock farm, but in Goebel farm, abnd in Yegua at 3164 ft. V. G. Schimmell et al's Geo. West, d & a 4216 ft. Jack Starrett et al's Border Nat'l Bank 1, Brown 100-ac tr, Border Nat'l 228-ac tr, Stephen Hayes sur, 1½ mi sw Whitsett, mim.

MAVERICK COUNTY—J. W. Boicourt's Edson & Estrada 1, James Eaves sur 68, 12 mi n Eagle Pass, td 2019 ft, Eagleford, sd. Rio Development Co.'s 1, Winchester Kelso, 29-ac in sur 2, 3 mi ne Eagle Pass, d & a 1003.

McMULLEN COUNTY—Big Rock Corp.'s Henry R. Martin 1, 954-ac tr, Emil Weiting sur, 13½ mi s Tilden, dr 300 ft. Herman Brown's S. A. Joint Stk Lnd Bnk 1, 1000 ft s Frio River, 60-ac tr, M. J. Brown sur, lcn. R. H. Feltner et al's H. W. Rhode 1, ne¼ L. N. Snowden sur 18(lcn, will not begin work until Feb. 15. Humble O. & Ref. Co.'s H. C. Edrington 3, n½ of A. B. sur 55, 2 mi ne No. 1 Edrington, d & a 3159. Edwin M. Jones' Harry Ezzell 2, 160-ac tr, sec 13, Patrick Fadden sur, 4 mi sw Simmons City, 2 mi s No. 1, t Govt Wells 1192, g snds 1192-98, soft snd oil 1198-1207, dst 1186-1207, ⅜ ch, 15 min, slight gas show, 1050 ft fluid cut with live oil & gas fr top to btm, dst 1380-85, show 1230 ft sw with gass bow, dr ahead 2273. Rowan & Hope's H. C. Edrington 1, n½, se¼ sur 81, cored gas sand 1765-78, set csg, dr plugs, td 1775 ft.

MEDINA COUNTY—Frank A. Brown's Jack Bilhartz 1, 200-ac tr, s part of sur 24, J. Campbell sur, 12 mi se Hondo, td 200, set sur csg, sd boiler repairs. R. C. Hill's W. B. Odem 1, 174 ft wl of 160-ac tr sur 173-174, 5½ mi sw Hondo, td 300, making test, may go to Taylor. J. H. Lynd & W. W. Fondren's J. H. Lynd 1, 330 ft sl & wl of 800-ac tr, Abraham sur.

NUECES COUNTY—I. J. Allen & Seaboard's J. D. Chapman et al 2, sec 38, Laureles Farm tr, Ramon de Ynojosa gr, sp. R. B. Bryant & H. H. Howell's Antone Kocurke 1-A, 58 acres of s 113 acres of 172.5-ac tr J. H. Smith sur 25, 1 mi s Clarkwood, set csg 4423 ft, snd 4412-19 ft, td 4601, perf 4118-23, flow 8 bph, ½ oil & ½ salt water, several hours, went dead. Al. Buchanan & Blanco Oil Co.'s W. S. Gandy 1, e½ sec 60, Geo. H. Paul subd, 1 mi n Clara Driscoll field, dst 5810-47, 10 min 500 lb pres, 30 ft mud & red gasoline, td 6990 sd woo. Camp Prod. Co.'s C. Phillip Wardner Tr. (was Chas E. Stratton), 1, Stratton area, spudding. Lockhart Bros.' Mable Eliff 1, 3054.9-ac tr, Antone Longaria sur, 1 mi sw Texon Eliff 1, coring 5700 ft gas sand 4774-4804, gas sand 4857-71, gas sand 4980-90. E. M. Jones' Lucy Cooke 1, 2500 ft nl, 330 ft el of 546-ac tr, Quadrilla Irrigation Co. sur 139, 8 mi sw Corpus, mim. H. S. Moss et al's R. H. Coleman 1, 320-ac tr, sec 226, Bishop subd, Palo Alto gr, s of Agua Dulce field, td 6882 cmf dp with 10,000 szx, to comp thru dr pipe as gas well, now shut in. Sloan-Harvey & Green River Oil Co.'s Eno Cassena 1, sec 27, Agua Dulce farm lots, Benton Pasture subd, Antonio Longoria gr, 1 mi s Agua Dulce townsite, sd, dk up. Sta-Mex O. & G. Co. Inc.'s Oliver Bird 1, E. R. Oliver sur No. 162, 3 mi w Baldwin field, dst 4348-66, rec 20 stands sul w, d & a 4571. Baltic Oil Co.'s (Teague & associates)) A. M. Poenisch 1, lot 2, blk 32, Flour Bluff & Encinal Garden trs, 3 mi w Flour Bluff field, oil well orig abnd by Hueburt et al, coring 6550 ft s d h. Texon Dr. Co.'s Clara D. Sevier 2-B, relief well, 890-ac tr, W. W. Chapman lands, Palo Alta gr, s Agua Dulce, set 350 ft 16-in csg, dr 3800, crater broke out about 1200 nw of orig crater, killed with heavy mud & Xmas tree covered up to protect it fr flames. United Prod. Corp.'s W. H. Harvey 1, most northwesterly cor of 173.45-ac tr, Garcia sur, Chapman subd, Palo Alto gr, ½ mi sw prod of Agua Dulce field, coring 4900 ft. Wellington and Pan-American Prod. Co.'s Clara Driscoll Sevier 1-A, Wm. Gamble sur, se of Clara Driscoll field, td 6075 ft, perf 5422-27, tested sw, recemented perf 5348-56, flowed considerable gas & distillate ⅛ ch, tp 1900 lbs, cp 210 lbs, shut in for high pressure separator; Myrtle L. Stockton 1, ne¼ sec 25 Laureles Farm trs, Ramon de Yno Josa sur, 12 mi sw Corpus Christi, td 7005 ft, comp perf 4698-4706 ft, flowed 5 bbls 25.3 gravity oil hr, ¼ ch, tp 150 lbs, cp 750 lbs.

REAL COUNTY—Sun's Dietert & Oppenheimer 1, sec 7, GWT&P RR sur, 20 mi nw Leakey, dr 3790 ft.

REFUGIO COUNTY—Paul Meaders' Temple Lumber Co. 1, sec 1, G. W. Maine sur, ab 218, 2 mi sw Austwell, set 10-in sur pipe at 872, sd 2250 ft. Wynn Drlg. Co.'s Mrs. C. D. Roache 1, John Partick, Thomas & Jas. Douney

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SAN PATRICIO COUNTY—Buckingham Oil Co.'s Jean Davis 1, 330 ft nl & sel of 34.8-ac tr, being sec 27, Stapper subd, 2½ mi sw of disc in McCampbell field, lcn. W. B. Craig et al's Drainage Ditch 1, 100-ac lse, M. Ramon sur, 2 mi s Plymouth field, dr 300. Golding & Fearis Turner Bros. 1, blk 6, Madterson subd, Turner Ranch, Samuel M. Edward sur, 4½ mi w White Point, 3 mi se Odom, dr 5260 ft. J. D. Williams & L. A. Douglas' F. D. Kokernot 1, 90-ac tr, sec 19, Paul subd, re-dr 3000 ft.

STARR COUNTY—Sam Adams et al's Mrs. Donna Norris Garza, 1400 ft s Hiway 4, 150 e of el Military Reservation in sh 20-A, porc 80, coring 1200. J. F. Anderson's Yzaguirre 1, 139-ac tr, porc 7-A, dr 3050 ft. John H. Clopton et al's Blonicio Tyerenia 3, lot 12, sh 14-C, Juris of Camargo, 1400 ft nw field, prep sp. E. A. Graham's Yturria et al 1, 29.96-ac tr, porc 100, 1500 ft n of w end Samfordyce field, td 3076, perf csg 2755-65, comp gasser, 925 lbs equalized pres. Holland Wood, Wood Est 1, 330 ft el of wl center 3/7 of porc 84, Camargo Juris, dr 1290.

WEBB COUNTY—O. W. Killam's Fee 1, blk 1, sur 1690, sp. Kirkwood & Morgan Frost Nat'l Bank 1, sur 734, d & a 2500 ft. Lutex Oil Co.'s Lone Star Con 1-A, blk 26, SS&B sub, por 12, sd 1650 ft. Magnolia Pet. Co.'s J. M. Garcia 6, sur 786, 2 mi ne Oilton, swabbed salty water, prep dd, td 2044, sand 2015-44, test 30 ft oil & mud. Paul Meaders' F. C. Garcia et al 1, 4½ sur 1101, 2 mi n Mirando City, dr 1600 ft. Smith & Story's D. & A. Oppenheimer 1, s½ of sur 34, 8 mi nw Oilton, dr 1200 ft. Smith & Taggart's sur Jones 1, sec 674, Rube Transportation sur, 12 mi ne Mirando City, d & a 2508 ft. Wilcox O. & G. Co.'s Dunbar 1, w cor of sur 1135, swl along nwl sur 1135, extended 2000 ft nw at r angle 800 ft to lcn, ru; Puig Bros. 1, sec 9, Loma Blanco Pasture of Johnquin Galan gr, sur 2183, dr 5500 ft.

WILLACY COUNTY—Ruiz-Morton Inc.'s Francisco Ammendioz, center lot, Lettle sh 4, San Juan de Carricitos gr, ru; Ruiz-Morton Inc.'s Johnson-Stilman 1, lot 14, blk 25, sh 44, San Juan de Carricitos, moving in derrick. Shell Petr. Co.'s Yturria Lnd & CC Co. 1, sh 64, 6 mi w Raymondville, td 7666, prep deepen to 9200 ft.

ZAPATA COUNTY—Mills Bennett Prod. Co.'s Flores Bros. 1, 11,601 ft nel, 1040 ft sel porc 37, 8 mi ne Zapata, coring 2300 ft. W. C. Bob's J. M. G. Martinez 2, s¼ blk 22, W. R. Duke subd, Randado gr, 1 mi w Charco Redondo field, lcn only. J. D. Long & Sam Evans et al's 22-ac tr Vella gr, sat snd 1600-04, running csg.

ZAVALLA COUNTY—J. F. Wilcox's T. J. Gillam 1, sw¼ sec 11, blk Z-GW T&T Ry. sur, 6 mi ne Batesville, td 1000, dr.

TEXAS GULF COAST

BRAZORIA COUNTY—Beaty, Bowles & Borsodie's Truska 1, Algoa prospect, H. & T. B. sur, No. 6, dr shale 9798 ft. Henry DeArmand's Fite 1, Sandy Point area, D. Talley sur, testing 6501 ft.

BRAZOS COUNTY—Francis & Stone Oil Co.'s Graham 1, s of College Station, A. Stevenson sur, dr shale 1358 ft.

CHAMBERS COUNTY—Kirby Pet. Co.'s W. D. Haden 1, South Cotton Lake prospect, Chambers County School Land sur, building roads. Salt Dome's A. Lawrence 1-B, South Cotton Lake area, S. Barrow sur, dr shale 4108 ft. Sun's White Estate 1-B, Seabreeze area, Wm. Mays sur, dk.

HARDIN COUNTY—E. J. Kimball's Keith Lbr. Co. 1, Votaw area, A. Rogers sur, dr shale 1358 ft.

HARRIS COUNTY—Geo. Lawrence's Zapp 1, Bammel prospect, J. Farwell sur, fsh 6525 ft. Stanolind's Oates 1, Clinton area, C. Martinez sur, dr shale 2140 ft; same operator's J. Warren Minerals 1, Hockley area, H. & T. B. sur, No. 1, dr shale 4769 ft. Texas Gulf Prod. Co.'s Gillispie & Garnsey 1, Aldine area, S. Contreras sur, roads.

JEFFERSON COUNTY—Humble's Jefferson Land Co. 1, Cheek prospect, C. Hillibrandt sur, dr shale 7381 ft.

LIBERTY COUNTY—Diadem Oil Co.'s Pickett 1, Devers area, H. & T. B. sur, No. 10, dr shale 1271 ft.

MATAGORDA COUNTY — Continental's Robbins 2, Citrus Grove prospect, waiting on casing, 6612 ft. Hammond Exploration Co.'s Croker 1, South Bay City field, E. Hall sur, no report. Mayo, Smith & McDaniels' Calhoun 1, Ashwood prospect, D. Rawls sur, dr shale 6890 ft. Glenn H. McCarthy's Foley 1, Palacious prospect, L. Goodwin sur, dr shale 3109 ft. Strake Pet. Corp.'s Sargent 1, Poole Ranch area, L. E. Parker sur, dr shale 7378 ft. Sun's Craig 2, Hawkinsville area, J. Williams sur, dr shale 3679 ft. United North & South's Stoddard 1, sw of Buckeye, J. B. & M. Cotton sur, dr shale 2918 ft.

MONTGOMERY COUNTY—W. W. Champan's Thomas Foster 1, Willis area, D. Pevehouse sur, sd 3622 ft.

POLK COUNTY—Mayo et al's K. Mayo 1, w of Segno, J. G. Loving sur, mim.

WALLAR COUNTY—Sumas Prod. Co.'s Menke 1, se of Hempstead, C. Donohue sur, dr shale 1019 ft. H. E. Williams' Giddings 1, near Hempstead, J. Mouser sur, mim.

WASHINGTON COUNTY—Sun's Lauter 1, Clay Creek field, N. Clay sur, sd in salt 8306 ft.

WHARTON COUNTY—Sam G. Harrison's J. Byerly 1, El Campo prospect, E.T.R.R. sur, No. 27, dk. Albert Plummer's Logue 1, Spanish Camp area, S. F. Austin sur, No. 3, dr shale 6130 ft. Texas Co.'s Kluck 1, Blue Basin area, J. Hyland sur, roads.

UTAH

EMERY COUNTY—Standard Oil of California and the Continental Oil Co.'s Unit 1-A, cnw nw 27-23s-11e, sd 1652 ft.

GRAND COUNTY—Columbia Crude Corporation's Rath-Government 1, ne sw ne 12-25s-20e, dr 2081 ft in Paradox formation with so, 7-in csg set at 2033 ft. Utah-Southern Oil Co.'s Hyde-Government 1, s nw nw 32-22s-20e, dr 6218 ft in upper Hermosa lime.

NEBRASKA

SIOUX COUNTY—J. M. Huber Corporation's Morgan 1, cnw sw 32-35n-56w, dr 2595 ft.

WYOMING

BIG HORN COUNTY—J. W. Bales' Parker 1, csw sw 23-49n-89w, sd 1012 ft.

CARBON COUNTY — General Petroleum Corporation's Union Pacific 1, sw sw sw 5-19n-83w, running 8⅝-in csg to 2900 ft to test so from 2900-3050 ft.

GOSHEN COUNTY—Ohio Oil Co.'s Red Cloud Cattle Co. 1, ne nw 28-29n-62w, dr 206 ft after setting 10-in csg at 184 ft.

LARAMIE COUNTY—Amerada Petroleum Corporation's Morton 1, csw sw 13-13n-68w, dr 8558 ft in sandy shale.

NATRONA COUNTY—Summitt Oil Co.'s Government 1, se ne nw 21-33n-80w, dr 1861 ft.

NIOBRARA COUNTY — Adams-Louisiana Co. and H. C. Elwell's Sam Joss 1, csl ne nw 1-34n-66w, sd 2350 ft for csg.

PARK COUNTY—General Petroleum Corporation's Government 1, nw nw nw 33-47n-100w, fsg for drill stem which twisted off while ur to set 9⅝-in csg at 5660 ft for test of os found in Embar lime at that depth.

PLATTE COUNTY—Dividend Oil & Refining Co.'s Government 1, csl nw sw 17-24n-66w, sd 2385 ft.

WESTON COUNTY—Conway Oil Co.'s Government 2, se ne nw 7-41n-60w, dr 783 ft.

GETS CONCESSION

Petromex, the semi-official government petroleum company of Mexico, has been granted a concession by the ministry of national economy to explore and exploit 1570 hectareas of land in Camargo municipality, Tamaulipas state, near the United States border, but in such a way as not to infringe rights the Border Oil Company and Huasteca Petroleum Company have to adjoining tracts.

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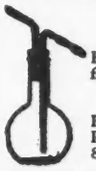
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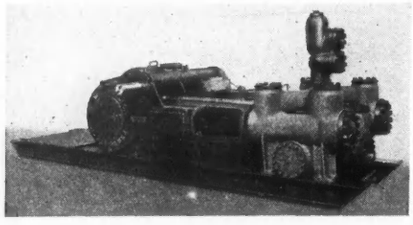
NEW PRODUCTS FOR THE FIELD
Machinery • Tools • Catalogs • Books

LARGE SLUSH PUMP
Oil Well Supply Company

Oil Well Supply Company, Dallas, Texas, announces production of the largest power driven slush pump offered for oil field use, the No. 20-P, 7¾ inches by 20 inches.

No. 20-P features rigid power end construction with the entire main bearing supporting structure integral with the frame and with no separate main bearing caps. There is a weatherproof and oil tight enclosure with special piston rod assembly to keep the mud out. Lubrication is by a combination of oil bath and forced feed. Reversible gears are broad-faced and heat treated. There are heavy duty tapered roller bearings on shafts and crank pins, whereas those on crosshead pins are of the heavy duty, needle type. There is a one-piece, direct flow type of cast steel fluid chamber with a combination end-and-side suction.



Oil Well No. 20-P Slush Pump

The hydrostatic test pressure for No. 20-P is 4000 pounds per square inch for the discharge and 2500 pounds for the suction. Maximum working pressures are: discharge, 2500 pounds; suction, 1500 pounds.

WIRE LINE GUIDE
Patterson-Ballagh Corporation

A new type of wire line guide that is fire-proof and spark-proof and effective in properly spooling the line has been developed by Patterson-Ballagh Corporation of Los Angeles. This guide has an elongated rubber bushing which eliminates hazardous sparks because the wire line does not develop a metallic contact but is cushioned by the rubber. The guide consists of a resilient member, compactly housed within a metal container which permits free travel of the wire line for proper positioning of the line on the spool.

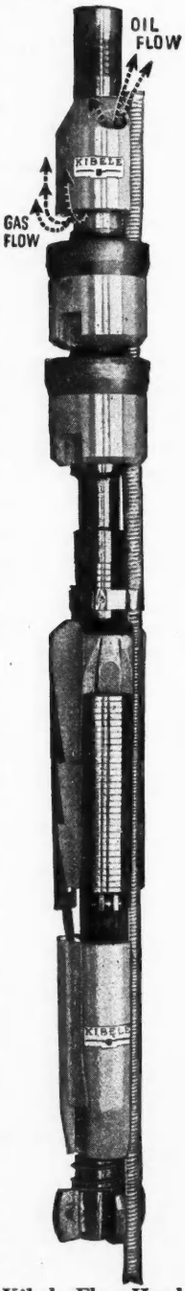
The liner is made in four 8-inch sections which can be turned when worn, thus prolonging the life of the bushing. Weight of the entire assembly is approximately 100 pounds. The overall length is 32 inches; housing is 28 inches, allowing 2-inch overhang on each end. The rubber liner extends several inches above and below the housing. The top and bottom of the liner blocks are tapered so that lubricant is dragged into the liner and is evenly distributed. The entire weight hangs on a loop at the center of the liner which properly positions the guide. Bridles are attached to the sides. By use of this guide, according to the manufacturers, the wire line is spooled evenly, preventing piling up of the line on the spool. Drilling crews recognize in the liner the advantage of an absolutely fire-proof device which will not cause sparks but will spool the line evenly at all times.

FLOW HEAD PACKER
Kibele Manufacturing Company

Kibele Manufacturing Company, Dallas, Texas, announces a flow head packer that can be completely assembled anywhere in the tubing string. This packer has been perfected especially for use with electric-driven centrifugal pumps, it is claimed.

Metal bowls and rubber cups are split, the cups packing off the cable as well as casing and tubing. The cable sets in close to the tubing and does not rub the casing. The flow head of this packer delivers oil from the pump into the casing at a point above that at which the gas flow enters, thus increasing efficiency of the unit. Oil flow and gas flow passages are of the same area as the tubing and permit unrestricted outlet through the packer. The device packs off by means of fluid pressure and employs no valves or other mechanical parts. Its mandrel offers no reduction in the internal area of the tubing. In the center of the flow head is a bridge that can be broken if access to the bottom of the tubing is necessary. This packer is not anchored in the pipe, can be lowered or raised and pulled from the well easily.

Metal bowls and rubber cups that are not split or made to accommodate the cable are also furnished so that the packer can be used for straight gas-lift work.



Kibele Flow Head Packer and Tubing Catcher
Patents Applied For

PORTABLE PIPE
The American Rolling Mill Company

The American Rolling Mill Company, Middletown, Ohio, announces a new type of portable pipe in 20- and 40-foot lengths with special quick-acting couplings, designed for utilization for one purpose at one place for a time and then for transfer to another place for another purpose.

The pipe used is a spiral-welded pipe. The coupling is known as the rapid-action coupling. Both may be used as part of conveying system for widely differing types of liquids, such as steam, oil (light or heavy) water, and gas.

CHASER GRINDER
The Oster Manufacturing Company

The Oster Manufacturing Company of Cleveland, Ohio, announces production of a new grinder for threading dies and chasers of all kinds.

Equipped with a special fixture and wheel for each type of chaser to be ground, it is said to be simple to set up and operate. Micrometer adjustments make it possible to obtain a perfect grind on cutting edge and lead. A special, thin type grinding wheel makes it easy to grind out broken teeth. The new grinder is small and compact and is powered by a universal motor which runs from the ordinary electric light socket.

Standard equipment with the grinder consists of one set of special fixtures and wheels for grinding any one type of chaser; universal motor and dressing stick for grinding wheels.

OVERLOAD SWITCH
General Electric Company

General Electric Company, Schenectady, New York, recently put on the market a new thermal overload switch for fractional horsepower motors, operating on line current and arranged for convenient mounting on the conduit or terminal box of the motor. It is completely self-contained and has no links or plugs to be replaced.

Known as the "thermo-tector," the device automatically disconnects the motor from the line when an overload occurs—before the motor reaches a dangerous temperature. Then, when the motor has cooled, it is automatically reconnected to the line, the entire operation being repeated at a safe interval until the motor is freed of overload or is removed from the line.

Elements of the switch consist of a thermostatic bimetallic helix, a heater helix, a flat steel spring, and a contact arm. The bimetallic helix is fixed at one end. The opposite end carries a slotted arm which rotates about one support of the spring. A low-resistance heater, which is connected in series with the motor winding and which carries the motor current, completely surrounds the bimetallic helix. This heater element is welded in place. The flat steel spring is mounted between two rigid supports in such a manner that

it is slightly bowed. This bowed spring carries a contact arm which makes contact when the spring is bowed in one direction, but which opens the circuit when it is bowed in the other direction.

When the bimetallic helix is heated to a temperature above normal, the free end rotates and reverses the bow of the spring. When the spring passes dead center, it also moves the contact arm and disconnects the motor from the line. With the line open, current ceases to flow in the heater helix, the bimetallic helix turns in the opposite direction, and when the temperature is again normal, the spring snaps to the "on" position.

TUBING SPIDER

Walter O'Bannon Company

Walter O'Bannon Company, Tulsa, has reduced the overall height of its automatic tubing spider to allow greater accessibility and easier wrenching on tubing heads. Four oversize slips give greater bearing area and provide quick action in gripping pipe. The bowl

O'Bannon Tubing Spider

has been recessed so that the slips recede instantly when disengaged.

Wickers in the slips are so designed that they are practically self cleaning. An auxiliary slip, the dog jaw, rides the tubing constantly and sets the main slips if the pipe starts back in the hole. This action is automatic. When running tubing the dog jaw is held back by a lever.

Manual Helps Drillers To Prevent Accidents

In an effort to promote good practices and prevent accidents in drilling oil wells, a manual entitled "Rotary Drilling" has been published by the Committee on Accident Prevention in Production of the American Petroleum Institute. The publication, known as "API Accident-Prevention Manual No. 10," has been approved by the general committee of the Institute's Division of Production.

Prepared especially for drilling contractors, foremen, drillers, and other oilfield workers, the 24-page manual contains 26 illustrations. The text is divided into "General," "Rigging Up," and "Operation" sections, each dealing with specific means and methods of preventing accidents in connection with various essential operations.

Copies are available at 25 cents each, with discount for quantity, from the American Petroleum Institute, 50 West 50th Street, New York.

This Week with the Industry's EQUIPMENT SUPPLIERS

Du Pont Explosive Sales Orgnization Holds Conference

Approximately 150 representatives of the Explosives Department of E. I. du Pont de Nemours & Company met at the Hotel Du Pont, Wilmington, Delaware, on January 12, 13 and 14 for the twentieth annual convention of the Technical Section of the department. Executives of the department, salesmen, technical field men, chemists and plant officials attended the meeting. Arthur La Motte, manager of the section, presided, assisted by S. R. Russell.

Lammot du Pont, president of the company; E. B. Yancey, general manager; W. H. Ward, assistant general manager of the department, and P. J. Kimball, director of sales of explosives, addressed the meeting.

Over 400 problems relating to the use of commercial explosives in the field were discussed by the men attending. The use of black powder, pellet powder, permissible explosives, Nitramon, high explosives and blasting accessories in such industries as mining, quarrying, oil drilling, agriculture and highway and other construction were covered by the discussion.

Bowen Company Moves Into New Houston Quarters

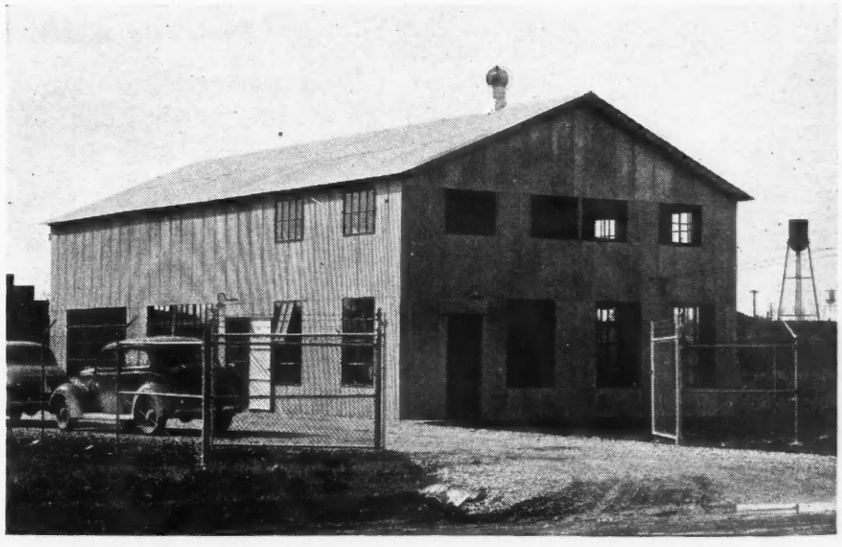
Bowen Company of Texas has moved into its recently completed offices and warehouse at 2429 Crockett Street in Houston. Incorporated in early 1934 by G. W. Bowen, F. N. Osmun, G. B. Coleman and H. A. Woofter, all of whom have been associated with the oil industry most of their lives, this firm has developed a number of specialties, which include the Bowen pack-off and releasing overshots and spears; wire line pressure and oil saving equipment; removable rope sockets; releasing rod sockets and mud mixers. The company also conducts a service department capable of handling practically all types of fishing jobs.

B. V. FISHER

Oil Center Tool Company announces the appointment of B. V. Fisher as assistant sales manager. He resigned from Continental Supply Company after four years service to accept his present position. Prior to joining Continental Supply Company, he represented Westcott Valve Company for seven years, being in charge of field sales in the United States.

Lincoln Offers Advanced Course in Arc Welding

Lincoln Electric Company, Cleveland, Ohio, announces it will conduct a course of advanced instruction in the practical and theoretical aspects of arc welding from February 1 to 5, inclusive, in New York at the Port of New



Bowen Company of Texas' new office and warehouse at Houston

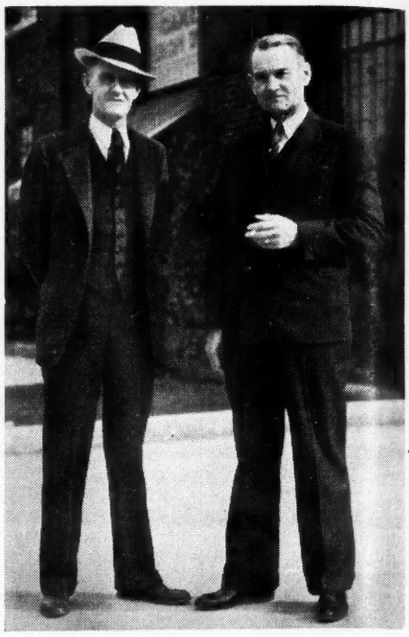
York Authority Building, Fifteenth Street and Eighth Avenue. There will be a small charge for the course, which will be under direction of E. W. P. Smith of Cleveland.

Morning sessions will consist of free consultations; practical welding demonstrations will be given in the afternoons, and evening sessions will consist of illustrated lectures and open discussions.

The following subjects will be covered: The shielded arc, its value and use in design; weld inspection; checking fusion and penetration; calculating stress distribution in welded joints; use of rubber weld models and polarized light in studying stress distribution; a practical metallurgical study of the welding of ferrous and non-ferrous metals; determining the most economical section in changing from cast to arc welded construction; organizing the welding department; and estimating welding costs. Characteristics of the welding arc will be illustrated by projecting the arc on a screen with a generator in operation.

Joe W. Allen Represents U. S. Firms in Mexico

Joe W. Allen, who for the past 23 years has been engaged in the oil equipment business in Mexico, has been appointed to represent jointly in that country Cameron Iron Works, Inc.; Oil Center Tool Company; Mission Manufacturing Company; Reed Roller Bit Company; Emsco Derrick & Equipment Company, and Baker Oil Tool Company.



Joe W. Allen, left, who returned to Mexico recently, with L. D. Hilton, sales manager of Cameron Iron Works, Inc.

Allen returned to Mexico recently after concluding negotiations with the companies named. His permanent address will be Apartado 542, Tampico, Tamps., Mexico. He first went to Mexico in 1913 where he was employed by East Coast Oil Company. He later worked for Mexican Gulf Oil Company a short time, and Lucey Manufacturing Company a number of years. He also represented Nordstrom Company at one time, and for a short period was engaged in the supply business for himself.

Emery Galbraith Joins Lucey Products Corporation

H. Emery Galbraith has joined the field sales organization of Lucey Products Corporation. He will make his headquarters at Gilliam, Louisiana. Galbraith has had long experience in the oil business. He has engaged in the drilling contracting business and is interested in producing properties in the Pine Island field.

McCarthy Moved from Corpus To Houston by Hercules

A. L. McCarthy, who has had charge of sales in the Corpus Christi district for the Hercules Supply Company, Fort Worth, has moved to Houston to establish an office on the ninth floor of the Shell building to become local representative of the firm. McCarthy will be succeeded at Corpus Christi by C. H. Duff.

Austin.—A bill has been introduced in the House by Representative B. E. Quin of Beaumont which would authorize Texas A. & M. College to lease its lands for oil development.

CATALOGS . . . BULLETINS

Helpful Publications Which Manufacturers Will Gladly Send Free for the Asking

Chains and Sprockets

Baldwin-Duckworth Chain Corporation, Springfield, Massachusetts, recently issued a complete catalog covering its line of chains and sprockets for power transmissions, conveying and elevating.

Drilling Control

The booklet "Drilling Control," which completely describes the place of the "Quintuplex" in modern drilling, has recently been revised. The third edition is now being distributed. Copies may be obtained from Martin-Decker Corporation, Long Beach, California.

Welding

The Linde Air Products Company, New York City, has ready for distribution a large booklet on welding pipe lines. The latest technique employed in several projects is discussed.

Oriented Core Barrel

Eastman Oil Well Survey Company has published Bulletin 600, titled "Oriented Core Barrel," a three-color, 8-page bulletin just off the press. It tells the story, replete with illustrations, of a tool which performs three important functions, namely: brings up the core, gives the angle off vertical and the direction of deviation, and establishes the direction that the core was reposing on bottom. A copy of this interesting bulletin will be mailed to operators upon request to the company, Box 1210, Dallas, Texas, or to any Eastman branch office.

Pumping Equipment

Texas Steel Company, Fort Worth, has available for distribution a 16-page brochure describing its line of sucker rods, jacks, backside assemblies, rod line swings, hold-ups, hold-downs, hold-overs, and safety knockouts.

Chain

Chain Belt Company, Milwaukee, Wisconsin, has announced publication of three bulletins descriptive of its REX roller chain, REX Griplock chain, and REX Z-metal chain.

Power Pumps

Fairbanks, Morse and Company, Chicago, recently issued a bulletin describing its duplex power pumps. It will be mailed to interested persons upon request.

Single-Phase Motors

Century Electric Company, St. Louis, recently issued a bulletin describing its single phase motors, with brush lifting, repulsion start induction.

Diesel Engines

Fairbanks, Morse and Company, Chicago, has ready for free mailing an attractive booklet on its line of Diesel engines. The types described cover a range from 10 to 2400 horsepower.

Power-Driven Slush Pumps

Oil Well Supply Company, Dallas, Texas, recently issued a series of bulletins describing its "Oilwell" line of power-driven slush pumps. Bulletin No. 20-P describes the double-acting, duplex piston type that is primarily intended for slush pump service on light rigs. Bulletin No. 20-P describes the new "Oilwell" No. 20 power slush pump, the largest power pump now offered for oil field use.

Feedwater Deaerator

Cochrane Corporation, Philadelphia, Pennsylvania, announces availability of publication No. 2540, a 16-page booklet which describes the company's deaerators and contains a discussion of the prevention of corrosion by removal of oxygen and dissolved gases from the water in modern steam plants.

USE THIS COUPON
(Address manufacturer direct)

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Please send me, without obligation, booklet on.....
described in February 1, 1937, issue of THE OIL WEEKLY.

NAME.....

ADDRESS.....

Squeaks from the Bull Wheel

O. K. Colonel

Colonel Ernest O. Thompson, member of the Texas Railroad Commission, has complained to The Oil Weekly about its production estimates showing 8000 barrels of hot oil in East Texas each week for several months. The Colonel wants to know how there could be exactly 8000 barrels of hot oil each week, as it appears to him it would vary. Although Colonel Thompson states he is not sure just how much hot oil is being produced in East Texas, out of deference to him we at first decided to show 7900 barrels one week and 8100 barrels the next, but our final decision was that since hot oil production in the field is now such a small matter we will not show it at all.

Cheaper to Tip

A group of men at the club were discussing very earnestly and the man from Aberdeen approached and asked the subject of the discussion.

"Will you join our Anti-Tipping Society?" asked one of the group. "We consider that tipping is a degrading custom and have formed a society to put a stop to it."

"Aye, I'll join," said the man from Aberdeen gladly.

"That's fine. The subscription is fifty cents a year."

"Och. In that case I'm thinking that it'll be cheaper for me to tip."

And On Time

I thought I told you to come after supper.

That's what I came after.

Some Job

What does your son do in the store?

He sells toys and pets in the basement.

What a way to learn a business.

Costly

"Bare knees are a luxury."

"How come?"

"Try to get hold of one."

Definitions

Doorknob—A thing a revolving door goes around without.

Straw—Something which you drink something through two of them.

Cobblestones—A pavement that people would rather were asphalt than.

Fern—A plant that you are supposed to water it once a day, but if you don't it dies, and if you do, it dies anyway.

Cartoon—A funny drawing that makes people laugh when other people claim cigarettes come in it.

Hearse—One car they are all dying to ride in.

Yes, Incompatability

"Why did you divorce your husband?"

"Incompatability."

"Incompatability?"

"Yes, he always woke up about two o'clock and wanted to go home."

And Deliberate

"I heard you went riding with Jack last night. Was he careful?"

"I'll say he was! He came to a full stop at every curve."

Explained

"Where d'ja get the black eye?"

"In the war."

"What war?"

"The boudoir."

Telling Too Much

"Tomorrow evening I am going out in the suburbs to see a model home."

"Listen here, big boy, if there is any model to see home you let someone else do it."

Oh, My!

"Were you presented at court when you were in England?"

"Yes and had to pay five pounds fine."

Some Doll

A business man coming home from work was telling his family about the new stenographer he had hired that day.

"She is the most beautiful girl I have ever seen, just like a baby doll."

His youngest daughter interrupted his conversation and asked: "Daddy, does she close her eyes when you lay her down?"

Patience!

An American who had been enjoying the sights and other things which London provides for tourists asked a passing policeman how he could reach his hotel.

"Stand on this corner and take bus 41 when it comes along," the constable told him.

Some time later he met the man at the same corner.

"What's the matter?" asked the policeman.

"'Sall right," said the sightseer. "The thirty-ninth bust just gone by; only got to wait for two more."

Meets Requirements

A lady was riding on the train with her son. The conductor came by and she said: "A fare for me and a half fare for the boy."

The conductor looked at the boy and said: "Lady, the boy's got long pants on."

"In that case," said the lady, "a full fare for the boy, and a half fare for me."

Gently

Excited Young Father: "Quick! Tell me! Is it a boy?"

Nurse: "Well, the one in the middle is."

Tomorrow

A pious and uncommonly homely spinster was accosted by a staggering drunk.

"Lady," he said, "you're the homeliest person I ever saw."

"And you, sir," replied the spinster, "are the drunkest man I ever saw."

"Mebbe so, lady," countered the drunk, "but I'll be okay tomorrow."

Bringing 'Em in Alive—Ed Salrin Goes Bear Hunting

This photograph was being displayed at the Wyoming big game dinner given by 16 oil men to approximately 500 of their brethren in Houston January 28, and reportedly shows Ed Salrin, Tide Water Associated Oil Company, during a bear hunt.

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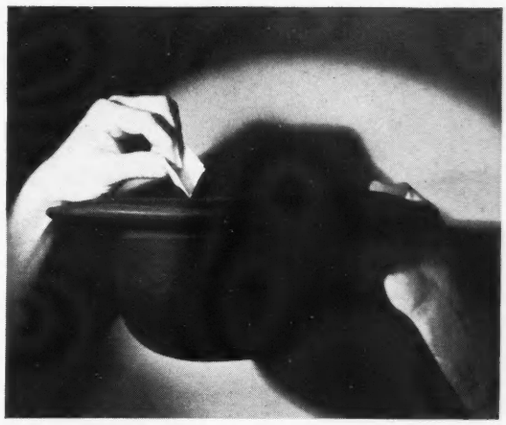

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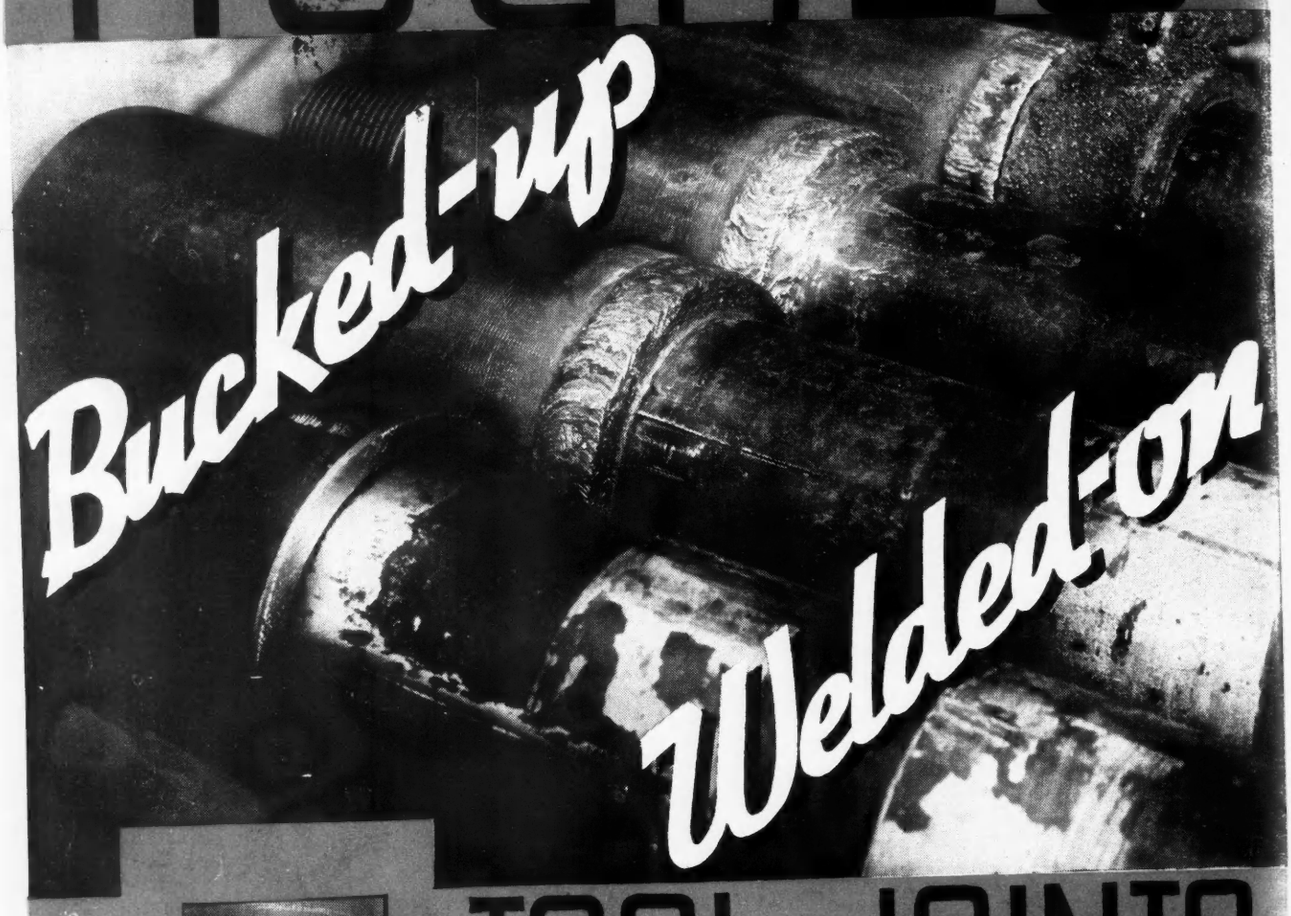

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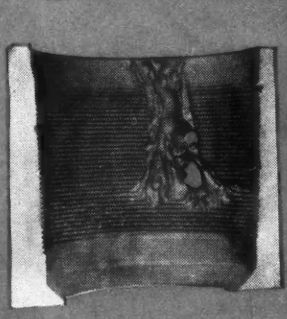

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